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THE FUTURE OF SCIENTIFIC MEDICINE— A PROBLEM OF PUBLIC CONCERN *

By LESLIE L. BIGELOW, M. D.
Columbus, Ohio

THE FUTURE of scientific medicine is a subject that might readily be dealt with from many different points of view and as many different lines of thought developed. One might, for instance, recount the achievements of medicine in the alleviation of suffering and the prolongation of life. He might, beginning with Hippocrates, come down through the centuries marshalling a host of medical men, "Witnesses of the light," whose discoveries have done more to enhance the happiness and enrich and prolong the life of the people, than all the achievements of kings and conquerors, who fill the pages of written history. The effect of malaria on the history of civilization might furnish one an interesting theme. The failure of Napoleon's Egyptian campaign through the decimation of his troops by lockjaw might be pointed out, and a graphic and appalling picture drawn of what might have been during the World war, if medical science through antitetanic serum had not made lockjaw among the wounded in the Allied armies and the armies of the Central Powers so rare as to be almost a surgical curiosity. With convincing argument it might be shown that the science of medicine built the Panama Canal, not the engineers. Diphtheria, which, less than 50 years ago, destroyed fifty-five out of each one hundred affected little children, and killed ten of the fifty-five by choking them to death, is now a comparatively harmless disease with a mortality of less than five per cent, which could be reduced to zero if the medical knowledge now at hand could be universally applied. The losses of the British in the Boer war, 5000 from bullets, 20000 from typhoid, would furnish an interesting theme for speculation as to what

* Read before the Kit-Kat Club of Columbus, Ohio, on October 19, 1926.

might have happened if the same ratio had held in the armies engaged in the recent World war. Medical science has completely banished typhoid fever as a disease in armies, and people in civil life may have that same protection. One might attempt to estimate the saving of time and strength, the conservation of health and happiness that medical science has brought to the motherhood of civilized nations through the reduction of infant mortality. Families of eight and ten and twelve were necessary a few generations ago if two or three children were to grow up to adult life.

The dramatic story of the discovery of ether, an American achievement which has been characterized as the "greatest discovery which has blessed mankind since the primeval days of Adam," could be linked up with the researches of Pasteur which gave birth to the science of bacteriology and the modern conception of disease. Lister's practical application of Pasteur's work introduced antisepsis and then asepsis by which the field of surgery has been tremendously extended, permitting the surgeon to search out and deal successfully with disease in the abdomen, the chest, the brain and even the heart itself.

With these and other like examples of medicine's contribution to civilization as a background—many of them the achievements of the past twenty-five years—who would dare to call it scientific romancing if the speaker went on to depict with enthusiastic assurance the conquest, in the next quarter of a century—perhaps tomorrow—of measles, scarlet fever, whooping cough, pneumonia, consumption, cancer? Might he not confidently promise through researches in bio-chemistry, at least a postponement of the ravages of those less spectacular, more insidious, but no less baneful disturbances of metabolism that bring on heart disease, kidney disease, and the general breaking up of premature old age? Leprosy, that most horrible of diseases that has haunted our imagination since childhood when we first learned about it from our Bible stories—was it not but yesterday that hope turned to assurance of its cure through medical science; and was it not but the day before that a new weapon was placed in the hands of the physician which enables him to do more than stand helplessly by while his patient dies of diabetes?

In such an approach to our subject lies inspiration for an oration that is beyond me. I choose to discuss certain economic factors in the practice of medicine, and shall hope to convince you, as I am myself convinced, that society, if it is to continue to reap the benefits of scientific medicine should concern itself with tendencies and projects everywhere springing up, many of them initiated and fostered by the state itself, that are bound, unless checked, to bring economic disaster on the medical profession and consequent harm to the public.

As I am unskilled in the euphemisms with which another who might handle this subject would avoid the use of such common words as "compensation," "pay," "dollars" and "cents," and as it might appear from my own use of such vulgar terms that my interest lies in the exaction by my profession of its pound of flesh and has no more worthy aim, I should like before I take up some of the problems that are exercising us, to register my own firm conviction that the medical profession exists, not for itself, but for the service it can render society. We are of some importance to ourselves, of course, but after all, there are only some two hundred thousand of us in a population of over a hundred million, and if it should appear that the socialization of medicine—which involves its destruction as a free and independent profession—is necessary for the welfare of the people as a whole, then that change should and will take place, no matter how it may affect the doctor or what he may think of it.

It is a law of nature that all new life must be born in pain. No one knows that better than the doctor. The question for society to think through before these tendencies toward the socialization of medical practice have gone too far to be checked, is whether this new life may be better than the old; whether the type of service rendered and the character of productive scholarship encouraged will be equal to, greater, or less than

that it has enjoyed in the past from an independent medical profession.

My answer to this question, as will appear, is in the negative; and I hope to make the point that the medical profession, if it is to continue to render its service to society, is entitled to a degree of profit that will permit it to meet with comfort and assurance the same economic pressure to which others are subject.

Service, a word which has been given real meaning by the accomplishments of medicine since the days of Francis of Assisi a thousand years ago, has become almost a by-word engendering suspicion in these latter days when it has been so freely adopted by industry to stimulate consumption. Preceded by the magic word "social," it has become a kind of sugar-coated pill through which well-meaning or designing uplifters, volunteer or professional, narcotize the thought-processes of the charitably minded or the taxpayer into the acceptance of programs which look well enough on their face, but which often enough are full of unappreciated evil potentialities.

It is a human characteristic to overlook the obvious. How few of us realize that the world in which we live has reality, and that the material things on which we set such store have value only because of human life. If conceivably it were suddenly true that no more babies could ever be born, and the conviction of this truth was instantly universal, how much would Fifth Avenue property be worth tomorrow, next week, next month, or in a year?

"For who to dumb forgetfulness a prey, this pleasing anxious being ere resigned?" The poet's rhetorical question has its obvious answer. "To be, or not to be," may have exercised Hamlet. Mankind wastes little time on such soliloquy, and those few individuals who make their quietus with a large bodkin or other means but prove that rule that life is sweet. It has even been said that all a man hath will he give for his life. This, it may be remarked parenthetically, is an excellent example of poetic license to most doctors, who more familiarly observe that all a man *has* does he give to the receiver who takes over his business, or to the criminal lawyer who keeps him out of jail.

Is not anything that touches the welfare or menaces the security of a profession dedicated to prolonging and making happier and more effective the human lives that make these values, a matter therefore, of wider and deeper significance than its mere application to the medical profession? Is not from this point of view the future of scientific medicine a matter of very vital public concern?

The foibles, effectations and vagaries of physicians have been made the butt of humorists since the memory of man runneth not to the contrary. The comedies of Plautus and Terence (200 and 100 B. C.) amused Roman audiences with many a brilliant sally at the pretensions of the physicians of that day; and those who pride themselves on their witticism anent the alleged affiliation between doctor and undertaker will be chagrined to learn that Martial anticipated them in one of his famous epigrams some eighteen hundred years ago. Moliere with wit and satire subjected to penetrating analysis the hypocricies of the quacks of his day; and Bernard Shaw in our own day has used more than once the medical profession for the display of his peculiar gifts of sarcasm. The word "sarcasm," by the way, comes from a Greek word which means literally to rend flesh with the teeth like a dog, and much that Shaw has written is savage enough to suggest this original meaning.

The medical profession has through the centuries, therefore, formed the habit of having its foible held up to ridicule for the amusement of the public in its lighter moods. It realizes that the source of enjoyment to a large extent lies in the recognition by the reader or onlooker of the portrayal of his own shortcomings. It knows the public, however, in a more serious mood, the public that welcomes the physician in its hour of trouble, a public that spends enormous sums on the machinery of medical education to insure a high order of character and ability in the men who are to be called upon for a sacred and responsible service.

The medical school exists and is supported by the public for two purposes: to equip its

students with a knowledge of the science and practice of medicine to the end that they may be safe and sane counselors of the sick; and to initiate and foster medical research. There may be other objects, but it would seem to be easy to agree on these two as constituting its fundamental *raison d'etre.* It may be assumed that medical research is supported and pursued in the hope that more and more discoveries will be made which will result in the alleviation of human suffering, the conquering of disease, and the prolongation of human life. The results of such research may conceivably, in certain instances, be capable of mass application without the intermediation of the doctor; for the most part, however, these discoveries will but add to the knowledge and armamentarium of the doctor, and the public will reap the benefit of this research work through the doctors it employs, or not at all.

If this statement of the function of the medical school approximates the truth, then may we not accept as a corollary the statement that the condition under which these young men work who have given up twenty-two of the first twenty-eight years of their lives to the acquisition of those minimum requirements which the public demands, should be so safeguarded that the knowledge acquired at such expenditure of time and money may be made effective through practical application?

Here is not to follow a list of the discouragements that face the young practitioner, who at the age of twenty-eight is pushed forth from the cloistered life of his alma mater into the world of getting and spending — a business world with whose ideals, aims, methods, and standards he is almost wholly a stranger. Many of his problems would be settled if the enlightened public conscience that has provided his expensive training were consistent and protected him or rather the public he is scientifically trained to care for from unfair and unjust competition.

This, as Kipling would say, is another story, and so too are those internal professional problems having to do with ethics, conduct, advertising, organization and medical education. What I desire particularly to discuss is an external problem which may be summed up in the words "State Medicine."

It is again necessary to point out that the medical profession is made up of its individual members, and the average of the sum total of the good it may accomplish is measured by the average ability of the profession. Every effort is being made by medical education and legal requirement to make this a high average of ability. It should not be necessary to labor the point that for this man as for any other a degree of economic security is imperative if he is to display the best that is in him.

Slowly and insidiously, without appreciation, by their often well-meaning but thoughtless sponsors, of their ultimate effect on medical practice, or boldly and with deliberate intent to work quickly a revolution, certain movements have been allowed to gain headway or have been instituted which if unchecked will lead to state medicine, or the socialization of the practice of medicine.

What may we expect from this revolutionary change in the status of the medical practitioner when he ceases to be an *individual,* and becomes a mere unit in a new army of governmental employees, with the consequent abrupt shift in his allegiances and loyalties?

It will involve for one thing the loss to the doctor of those stimuli which today and in all ages, have spurred men on to achievement. Medicine *is* a profession dedicated to service. We sincerely believe that the true physician finds his richest reward in the knowledge that God has used him as the instrument to save life or restore health (I dressed the wound; God healed it" Ambrose Pave). Just as he experiences his keenest sorrow when the long hard struggle has been in vain.

The sacredness of his calling, however, and the poignancy of its emotional reactions which make by comparison other vocations seem dull and commonplace, do not relieve him from the economic pressure to which all other men are subject, nor do they deprive him of the natural human instinct to provide through his effort not only the necessities, but also the comforts and luxuries of

life and the means to insure security and independence in his declining years. How can he, the average man, the general practitioner, who carries the heavy load of the nation's sickness, be expected "to scorn delights and live laborious days," if he is to be reduced under a system of state medicine to the dead level of mediocrity of a unionized individual whose recompense, determined by a group in which he will have little or no voice, is *fixed*—the same for him who gives with his service his conscience, his strength, his soul, his whole self, as for the incompetent, lazy, lotus-eating slacker who labors in the same vineyard and gives nothing but the minimum of perfunctory motions that will keep him on the pay-roll? Who would *fardels* bear to grunt and sweat under this weary kind of life? How many, subject to the insolence of office and the spurns that patient merit might have to take from the unworthy under such a system would not suffer in their interest, their enthusiasm, their morale?

This is gross exaggeration, you may object. No such injustice as is here suggested would be tolerated. The same altruism that has animated the best minds in the medical profession through the centuries will actuate the politicians, the commissions, the publicity experts, the secretaries, the statisticians, the inspectors, and the supervisors who will promptly spring into being to guide and guard and prod the doctor along his very narrow way. They will acquire at a gulp the ideals and traditions that make the real doctor of today blood brother to Osler, Koch, Lister, Pasteur, Harvey and all the other great figures in medicine back to Hippocrates, and they will be incapable of any thought or action that might stain that noble heritage. Their control over the actions and destinies of the doctors in their charge will be kindly, generous, sympathetic and beneficent—a little firm, of course, for was it not necessary under the old regime to discipline the whole profession because some of their members misused narcotics and alcohol—but gentle withal.

Yes, we will be petted and gentled, and the nose bag will be found to contain enough at regular intervals to keep us reasonably fat and sleek and contented, so that we will work well in harness, whinny in the presence of our masters, and plow the prescribed number of furrows every day. Not too many oats, of course, lest we feel them and kick over the traces, nor too few, lest we drop in the harness. A little experimentation will determine the exact amount of pabulum necessary to keep the pack horse tractable and on the job. Be sure it will always keep him a pack horse. Rare indeed will be the battle-charger who paweth in the valley and rejoiceth in his strength, who smelleth the battle from afar off and mocketh at fear—the system cannot be expected to breed such a magnificent and glorious creature as this—the great clinician, if you please.

No, those who are using their influence to hasten the day of State Medicine are sure there will be no abuse of power by the political bureaucracy that will settle down upon the practice of medicine, and so it is to be hoped; but it may be well to recall and ponder the words of Thomas Jefferson whose wisdom is too little regarded in these days of passion for standardization of activities as well as things, and for centralized control of everything and everybody.

"It would be the greatest delusion," Jefferson says, "were we to let confidence in the men of our choice silence our fears for the safety of our rights. Confidence is everywhere the parent of despotism; true government depends upon jealousy, not confidence."

A statement by John Marshall, Chief Justice of the United State Supreme Court (1837 Brown against Maryland) should further serve to give us pause as we listen to the seductive melodies of these modern Pied Pipers. "Question of power does not depend upon the degree to which it may be exercised. If it may be exercised at all, it must be exercised at the will of those in whose hands it is placed."

Can we assume that this proposed bureaucratic control will function in such a way as to stimulate individual effort to match or outmatch the achievements of those individuals living and dead, whose work as members of a free and independent profession has raised the science of medicine to its present high position? It is a large assump-

tion, unjustified by experience. To deprive individuals of just rewards for their efforts —rewards which will and should vary as the individuals vary from one another in capacity—is to stifle individualism, and dry up the stream of creative effort which spells progress. This I take it is a species of communism, which the American people would not tolerate for its medical advisors if they could be made clearly to see the problem in all its aspects.

The mere investiture of a man with the degree of Doctor of Medicine does not wipe out his instinctive human revolt against injustice and exploitation. Socialize the practice of medicine, as you inevitably will under state medicine, and the best men will seek other lines of endeavor, if any there be left, where their talents and abilities, unhampered by artificial bureaucratic restrictions, may have free play and proper recognition. And then in time we may witness the deplorable spectacle of medical men striking for higher wages. They struck in Ireland for $35.00 per week. Or we may find the panelized doctor making a second visit to deliver the placenta, thus earning another small fee of which there must be many, if their sum is to be sufficient to meet his monthly obligations. It has been so reported from Germany. Or we may see the American medical profession through committees of its more widely known members, soliciting their colleagues in other countries for money gifts to keep its members and their families from starvation. Have not such appeals as this come to us out of Austria?

We have enough and to spare of those who think the world is out of joint, and who rejoice in the conviction that they were born to set it right. These modern exemplars of Moses go up into the mountains of their ego, evolve a revelation of the truth from their own inner consciousness and come down with a panacea or a formula which requires only legislative adoption without amendment to bring about the millenium. Too often this panacea or formula will be found to take the form of a paternalism which paralyzes ambition, destroys initiative and weakens the individual; or it may be represented by a series of "thou-shalt-nots" designed to introduce the goosestep into human conduct, in the fatuous hope of establishing ethics and morality by fiat.

Blackstone defined law as the rule of civil conduct which commands what is right and prohibits what is wrong. The common law, sanctioning what is right, is the expression of human relationships established by custom. Some one has said that the people make the common law and greenhorns make the statutory law. Human relationships established by custom may change, but they change by evolution, not by revolution, and the attempt to change them abruptly and forcibly by statutory enactment has resulted and may result again in revolution.

Henry W. Farnam, writing in a recent number of the *Yale Review*, complains that railing at law makers has become of late one of our popular indoor national sports, for which there is no real justification. The civilization of today, he says, is not a biological product; it is a product of invention and invention is revolutionary. Rapidity of invention and discovery which changes the material aspect of our civilization almost from day to day has made human relationships increasingly complex and confusing. The industrial revolution, for instance, brought about by the introduction of the factory system was followed by such a train of evils that nothing but legislation of drastic sort would stop them. So began legislative enactments to protect the many and the weak from exploitation by the few and the strong, and with each new mechanical and technical invention—the steam engine, the power loom, the steamship, the railroad, the telephone, the gas engine, the aeroplane, the movie, the radio—our industry, our labor conditions, and our daily life have been changed and new laws have been found necessary to settle the question arising from these new conditions.

One may subscribe to the logic of this argument which might be used in favor of socializing medicine and yet be well within his right and duty as a citizen if he opposes the tried and proved historical position of a free and independent medical profession against the effort to destroy it by that in-

creasing band of "I-am-my-brother's-keeper" whose *ipsi-dixit* formula for the immediate correction of real or fancied social evils is paternalistic legislation.

They know better, these uplifters, but the recipients of their proposed governmental hand-out—for whatever purpose—the poor downtrodden workingmen, who are now to be lifted up and supported by another crutch, to still further enfeeble their native stamina and independence, are led to believe it will cost them nothing because the expense is to be borne by the state.

What a fine thing it would be if every citizen were taught to repeat every day the boast of Louis XIV, "I am the State", and say to himself as he goes to the polls: "What the state does is my business; the state and federal officers are my servants; these appropriations are my appropriations; and the money that goes into them is my money and comes out of my pocket. And it is my right and my duty to subject the affairs of government—so far as I am able—to the same careful scrutiny I apply to my own business and family affairs."

What is there so sacrosanct about the word welfare that when it is applied to any piece of proposed legislation, its proponents expect the public to bow down in quick and worshipful acquiescence, and hold up to scorn and ridicule those who would pause to reckon the cost and balance it against the promised gain? The gain is commonly expressed in terms of money saved—in added efficiency to make more goods, to make more money and to what end? The cost may have to be reckoned in the impairment or loss of vital, personal, sacred, human relationships, the value of which cannot be expressed in terms of money, and the meaning of which may only be fully appreciated when they have been sacrificed to the national passion for standardization, mass production and efficiency. We are always in a period of transition. Nothing is perfect, and perfection is not claimed by any one of us for the practice of medicine. Is that any reason why betterment should not be brought about by orderly process with due regard to experience and careful reckoning of all the factors involved in any proposed change? Is it not possible to find a secure middle ground between the tenets of those who might be said to take for their motto "as it was in the beginning, it is now and ever shall be," and the point of view of those uneasy, restless spirits who regard the status quo only as a point of departure, to whom change is synonymous with progress, and who are only happy when they are under way, their destination being all too often a fantastic, impracticable, nebulous Utopia?

"The friends thou hast and their adoption tried, grapple them to thy soul with hoops of steel." Whatever its shortcomings—they have never been of the heart—the unbiased student of history will be quick to acknowledge humanity's debt to medicine, which has accomplished what it has accomplished, by virtue of being a free and independent profession, enjoying intimate, personal, friendly relationships with those it has served. None of us here can deny that something fine and sweet and ennobling comes into the life of the patient and the doctor too (it is his real and lasting reward) from just these relationships.

May I tell briefly a story that will give point to what I have been saying? Eighteen years ago I came intimately in contact with a brother interne whose energy, interest, enthusiasm, and capability made him an inspiration and an example to his fellows. He was happy in the thought that his long hours and exacting duties were fitting him for his life's work. There was a young lady, as I remember, that played an important part in his plans for the immediate future. He graduated from the hospital and settled in a small New England city a hundred miles from Boston. Four months later he came back to visit the hospital and we who were still there eagerly cross-examined him as to his experiences. We missed the old-time buoyancy and light-heartedness. He seemed licked or somehow suddenly old, and did not have much to say. Finally we got from him the knowledge of his appointment as medical inspector of the school children in his district. "Well, that's fine," some one congratulated him. "That must keep you reasonably busy and pay you enough to start your household. What are the emolu-

ments?" "Two hundred and fifty dollars per year," was the reluctant answer. That was somewhat of a shock to his questioner, who continued: "What are your duties? What is expected of you?" "A complete physical examination of every school child in the district twice a year," was the answer. "And how many school children are there?" The reply was given and after a little mental arithmetic his cross-examiner exclaimed: "Why, you get five cents for each examination. What kind of examination do you give them?" "By God, I give them five cents worth," was the savage answer.

It was not his profanity that was the shocking thing. It was the visualization of the quick and complete reversal of this young man's attitude toward his work; his sullen, resentful, defiant, half-hopeful-that-we-would-understand-and-excuse expression that shocked me and has remained in my memory to this day.

The possibility of the development of this sorry attitude must be faced. An example on a larger scale is the kind of service the traveling public received from railroad employees when the railroads were operated by the government.

Let me tell another story that can be matched in the experience of every doctor in this room.

A few years ago Dr. Starling Loving, of Columbus, whose memory will be revered as long as any live who knew him or were ministered unto by him in over sixty years of practice, asked me to go with him to see an "interesting case." We stopped before a humble one story three room dwelling and entered the front room where on a couch lay a little eight year old girl, with puffy face, swollen abdomen and general anasarca of an advanced and desperate acute nephritis. I shall never forget the look of utter adoration on the faces of that child and its mother during the brief period while the kindly old doctor—he was then past eighty years of age—made his examination and gave his few directions. As we drove away, Dr. Loving said to me: "Doctor, the biggest fee I have ever had came from that little girl. Would you like to see it?" He took out his pocketbook and drew from it a piece of ruled cheap paper that might have been torn from a copy book, and I read in a weak scrawly childish writing:

"Dere Doctor Loving:—I am loving you and respecting you next to God."

I confess I was suddenly unable to see the paper to read further. And that was the biggest fee that Dr. Loving received in sixty years of practice. Does anyone here doubt it? Could he not have said truthfully —if he ever thought of it that way—when he went to render such a service to such a one as that little child, "I am about my Father's business"? Who will deny that something fine and sweet and ennobling comes into the life of the patient and the physician from a personal relationship such as this?

Sentimentality? I dare look you in the face and say it is sentiment and not sentimentality—sentiment that we can ill afford to exchange for the panelized, sovietized, job-lot, piece-work, service of a harassed, underpaid and overworked state-medicine doctor whose first allegiance is not to his patient and his conscience, but to the boss of the gang of which he is one, whose good-will he must foster to hold his political job.

No one with any knowledge of the influence of mental states over bodily conditions will be disposed to deny the tremendous therapeutic power of that intimate personal relationship between doctor and patient out of which is borne confidence, respect, esteem, affection.

The high priest of social service himself, who now advocates the care of the sick by specialized groups, said several years ago that if there were absolutely no good to be accomplished by any line of therapeutic endeavor and every one was aware of that fact, there still would be a place in the world for doctors—friendly, sympathetic counselors on whose broad shoulders the sick patient and his distracted family could unload their fears. Shall we exchange all this for service as impersonal as that of the postman who leaves a letter at the door?

The institution of marriage has been a friend of humanity, and yet there are many divorces and much domestic discord. Why not therefore attempt to subvert the sacred-

ness of this relationship? I am not so sure it could not be accomplished if time and money and determined propaganda joined hands for that purpose. Indeed you may read in the latest book depicting the blessings of state-medicine—the statement that the public health service will have every authority, not only to say who shall bring children into the world but how many they shall have. Quality will be sought; cross-matings will be arranged and by various methods of encouragement the most worthy will be led to reproduce. The health service will introduce a scientific system of birth control. I have been quoting verbatim. What a wonderful opportunity this cattle-ization of the people will give to the politicians to gerrymander a district into the Republican or Democratic fold.

Absurd of course. Improbable? Possibly. Is that any excuse for a free people to neglect the warnings of Thomas Jefferson and John Marshall, and jeopardize their liberties by a blind confidence in the men of their choice, whose power, if it is to be exercised at all, must be exercised at the discretion of those in whom it is lodged?

By the extension, through the World War Veterans Act of 1924, of the privilege of hospitalization and medical and surgical care to all veterans of all wars since 1897, no matter what may be the nature of their disabilities and without regard to their origin, nearly five million men were potentially pauperized at a single stroke. Here we have a federal government not only planting the germs of State Medicine in our body politic and entering directly into competition with private practitioners and private hospitals, but embarking on a course of paternalism that is bound to foster a flabby and spineless citizenship, which may prove to be the seed of national decay. Within the first year, before the glad tidings of this new bounty were generally understood, seventeen per cent of admissions to the Veterans Bureau hospitals were by persons whose disabilities had no relation whatever to military service, and the cost to the taxpayers, for this 17 per cent, exclusive of interest and depreciation on expensive hospital plants, exclusive of traveling expense of the patient, defrayed by the government, and exclusive of the overhead expense of the Veterans Bureau in administration and supervision, was $4,938,-659.02. What will be the cost when veterans become more familiar with the privilege granted, when, with advancing years they become more subject to disability and disease and may be expected to avail themselves of this gratuity in increasing number? What, to mention but one of a hundred evil potentialities, will be the effect on filial piety, and the ties that strengthen home life and develop the best qualities of our manhood and womanhood, when the realization becomes general that the worn-out infirm, aged, parent may be shipped off to a government hospital where "really, he will have better care than we can give him at home." Read, "Over the hills to the poor house" once again.

With this beginning, need it shock you that further amendments are pending that will establish a vast dispensary service for out-patients, that plans are being laid to extend this service to every dependent member of the veterans' families and that one statesman feels that "this service should be given employees of the government in lieu of higher salaries, because the medical personnel has to be maintained anyhow and its use should be made as general as possible."

How long, oh Lord, must we endure the repetition of these pricks before the threshold of stimulation is reached, and we rise in our might to defend those qualities in our character and those relationships in our common life which have made our nation what it is, against a legislative program conceived for no higher purpose than to catch the votes of the unthinking. Are not food, clothing and shelter as essential to health and happiness as medical attention in the hour of need? And may we not expect, if the program already under way, is carried to its logical conclusion, to see the establishment of commissary depots for the free distribution of food and clothing to all veterans of all wars, to all federal employees, and to all dependent members of all these families? When these same people get tired of paying rent, will not a complaisant government, sensitive to a vote now grown to an enor-

mous size, provide homes? You may equip these homes with radios and other conveniences of modern life and put whatever automobile in the garage your fancy dictates. You ought at least to have that privilege, for you—you and I—and all the others who are too preoccupied to give these vital matters thought, we are the state, and we must pay a tremendous price for these socialistic experiments in money, and a still greater price, it is to be feared, in a weakening or destruction of those ideals and that manhood which is the nation's strength.

The temptation is resisted to catalogue and comment on the long list of invasions of the legitimate field of the doctor's endeavor by legislative enactment, and well-meaning but thoughtless social movements.

The fifty-fifty system of federal aid to the states started a dozen years ago with the modest expenditure of less than a half million dollars to put in operation the Smith-Lever law for agricultural extension work, has grown until it now costs the federal treasury $110,000,000 annually with an equal outlay from the states so that the cost to the taxpayer is well over $200,000,000 a year. This money is available to the states that accept the subsidy, only on the adoption of an administrative set-up and regulations that meet the approval of the proper bureau at Washington.

The Sheppard-Towner maternity bill is one of these subsidy measures by which the principle of local self-government is being undermined, and under which "the transit of baby souls from the hand of God to the bosom of society" is going to be standardized, regulated, and ultimately conducted by agents appointed by the state. Can any one doubt that the time is far distant? Can we not forsee that the time may be near at hand when the investigations, reports, lectures, and nurse ministrations through which the promised land is being spied out, will no longer satisfy the "urge" to interfere; when the independent family doctor will be impatiently pushed aside to make way for the impersonalized service of the salaried state doctor, who takes his orders not from his conscience and his sense of duty, but from the political boss to whom he owes his job, who finds his chief compensation not in the spiritual exaltation that comes from a holy service, but in a pay envelope that will not be overly filled.

The law in Ohio which requires an annual census of crippled children through house to house canvass, and provides the machinery for their examination, and for the treatment of indigent cases by doctors paid by the state at rates of pay determined by the state, might be analyzed from the same point of view, and its inevitable impetus in the direction of state medicine pointed out. The precedent has been established. This taking over by the state of the medical care of a portion of the sick public is becoming an accepted part of the thought process, if any, of the taxpayer, and the way prepared for further encroachments.

Compensation by the state for medical service to one class of sufferers who previously have had this service as a charity freely and gladly rendered as a part of our contribution to the welfare of society, is subsidizing a small but important and influential group in the profession and influencing them in favor of state medicine. It makes no difference whether the sympathy of this group toward this aspect of paternalism is being enlisted by design, or whether it just happens to be a significant by-product. It probably is not due to design. The effect is the same. These men are being blinded—perhaps I had better say may be blinded—or rendered indifferent through the appeal of self-interest to the final degredation of the profession and consequent harm to the public involved in this departure.

How about the cardiac cripple? He is responsible for about 16 per cent of our mortality rate. How long will it be before an "Ohio Society for Cardiac Cripples" is formed by a luncheon club which must have some welfare uplift outlet for its energies, and shortly thereafter a propaganda initiated to have the state take over the care of this large share of the doctor's endeavor.

These movements, and others on which I have not touched, have already worked an economic hardship on the medical profession, and unless their ultimate effect on medical practice and medical progress is prop-

erly appreciated by the medical profession and the public, and some effort is made to check them, are bound to work greater hardship and final disaster.

Abraham Lincoln said a state cannot continue to exist, half free and half slave, and the same may be said for the medical profession. As more and more of their provinces are taken over by the right of eminent domain, the number of medical men who will be left to keep alive and perpetuate the traditions and glories of a free and independent profession will grow fewer and fewer.

A French philosopher has said that toleration is only another name for skepticism. No man ever believed with his whole soul that a thing was true and vital and essential to the general welfare without trying in every way to make others believe as he did. The measure of his toleration for opposing points of view may be regarded as the measure of his doubt about the validity of his own thinking. I have forgotten the connection in which he wrote, but I would make this application of his observation. Opposition to the movements I have been discussing must be based on something higher than the economic disaster which, as it seems to me, they will inevitably visit on the medical profession. . . . If we are honestly and sincerely convinced that the continuation of a personal, intimate service by a free and independent medical profession is better for the health welfare of our people than an impersonal socialized service of a profession that will have that type of ideals, aspirations, interest, enthusiasm and outlook that characterized the lodge practitioner of a generation ago—then we may oppose with uncompromising intolerance any movement that invades in any degre the field of the doctor's endeavor.

The point of view I have presented—my personal point of view—is not fortified by an array of facts or statistics, and I will be quick to acknowledge it may not be the conclusion of a profound thinker. "A man's soul is sometimes wont to bring him tidings more than seven watchmen on a tower." I believe firmly that state medicine is a menace to be opposed with all the force that in us lies, not because of its disastrous effect on the medical profession, but because of the harm to the public such disaster involves.

PROBLEMS CONFRONTING THE PROFESSION*

By SOUTHGATE LEIGH, M. D., F. A. C. S.
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ALMOST UNBELIEVABLE STRIDES have been made in the science and art of our profession during the past few years, causing radical changes in many directions, and requiring material readjustments to enable us to control our essential equilibrium. The span of human life has been materially prolonged, a great amount of unnecessary sickness prevented, and human suffering much alleviated. The profession has gone far to make man healthier, happier and contented. Developments have been rapid, and indeed too rapid for the busy doctor, who has a difficult time in keeping up with the new things of science.

There is, however, much more precision and hardly any guess work. The X-ray, laboratory, electrocardiograph, cystoscopy, and other important aids in diagnosis have cleared the vision, but the doctor's task is many times more difficult, and presents many serious problems.

Problem of General Practitioners

What can the general practitioner do today? How far can he go in investigation and treatment? Naturally it is impossible for him to cover the ground formerly embraced in such work.

* Read in the fifty-ninth annual meeting of the West Virginia State Medical Association, Morgantown, May 25, 1926.

This brings to mind the "passing" of the old "family physician," which in a way is deplorable. In the good old times he brought the babies into the world, helped to raise the children, studied their constitutions, advised with them as time went on, saw to their proper or improper mating and looked upon them as his own. In time they looked up to him, their adviser in both medical and other serious affairs; loved and respected him in all things. Each doctor had his families to look after. They rarely changed. The arrangement was mutually advantageous. The doctor knew his patients from "A to Z" and could give them the best that medical knowledge at the time afforded. If he needed assistance he was the one to get it. For the patient, his whole physical life was in the hands of the family physician. What an unfortunate condition we have today. In the country districts it is not so bad, but even there, without consulting their home physician, patients are constantly seeking "outside" advice, frequently of strange and incompetent people. In the cities the average patient goes from doctor to doctor. Even if thoroughly examined by one, at the next illness he will often consult another, who has no previous knowledge of his constitutional condition.

In the nature of things, we can probably never return entirely to the family physician plan, but by gradually educating the public we can arrange so that each family will have a competent medical man looking after them, who will from time to time make necessary physical examinations with complete record of each case. Patients should be led to know what such records mean and be brought to understand that these records should be consulted in all cases of after-occurring sickness. The family physician should, of course, be consulted when it is necessary to call in or confer with specialists in the various lines, so that the specialists may be informed of the previous conditions and findings, and the record be kept up-to-date.

There is no doubt about the fact that we are depending too much upon various aids and too little on our own judgment and common sense, which are more vitally essential in medicine than in any other profession or calling. And yet we must make use of the knowledge and assistance that is given us if we are to do our duty to humanity.

Group Practice

The specialist is a necessity, and on account of advanced development in every line, it is growing more and more necessary to have specialists in every department of medicine and surgery. After the most profound and prolonged consideration I am forced to the conclusion that "Group Practice" is the only solution of this problem. It means the grouping together, in intimate professional and personal relationship, of several men specializing in different lines. The ideal arrangement is to have each specialty represented, and to have the group located in the same office and in the same hospital.

If it should not be feasible to have so complete an arrangement, it is of course, essential to have the principal ones, such as surgery and gynecology, internal medicine, urology and obstetrics, together with the necessary X-ray and laboratory workers.

To be successful the members of the group must work together in the most intimate manner and with the greatest interest and harmony. They must feel that the patients coming to the group belong to them all, and must have the attention of all if necessary. The great and overshadowing advantage lies in the practicability of frequent and informal consultations, both in the offices and in the hospitals. The advantages to the professional men lie in their ability to make better and quicker diagnoses, and to give more thorough and more satisfactory treatment. With necessary modifications the plan can be put into effect in the country districts, and I feel that certainly in a few years the country doctors may be forced to resort to it.

On first thought such an arrangement for country practice may appear to be impossible. The solution, however, will come eventually through the proper functioning of the local medical societies. In counties where favorable conditions exist, and it should be so in a large proportion of them, the development of the modified group practice can be worked out without much difficulty.

Each county, or section, should have an X-ray machine for fractures especially. Let one man do that work along with his general practice, and with the understanding that he will make such examinations for all of the other doctors. Let another man develop a small laboratory where urgent and essential work may be done on the same terms. In a similar way have one man equip himself for difficult obstetrical work, also along with his general practice, but to be ready to help the other practitioners when needed. And so with children, urology, and emergency surgery.

This partial specializing will help the conscientious medical man who nowadays knows that it is impossible for him to keep up in all departments of the profession. He can, however, while doing general family work, equip himself both by study and the necessary appliances in one particular line, calling on his colleagues to aid him in those severe or difficult cases belonging to other special departments.

Dr. W. J. Mayo, in speaking on the subject of group practice, said:

"My brother and I have been accused of being the father of group medicine. We did not know it. We did not realize it—it was simply a question of trying to do better work, and of adding men to the force who had knowledge which we did not possess. The difficulty which we have in the practice of medicine at this present time is, we have too much knowledge; it is not organized."

In the nature of things, the average specialist, as the years go by, becomes more or less narrow, since his efforts are concentrated on his own department. Specialists grouped together are constantly broadening out, daily and hourly conferences with men in other lines influencing greatly their decisions in both diagnosis and treatment.

Group practice does not mean ease and financial gain. It does, however, if successful mean extreme satisfaction in the feeling that the patients are being given the best service known to science.

This naturally brings us to—

The Problem of Thorough Examination of Patients

Certain commercial organizations undoubtedly rendered a useful service to the public in exploiting the need of periodical examinations. However, starting out in a philanthropic way, with the aid of prominent medical men to give them standing, they have developed into money making affairs. On investigation, the American Medical Association has found that they make use of the doctors in an unethical manner, buying their services for small amounts and selling them for much larger sums. The investigations also are conducted in a most unsatisfactory way. The Association has called upon its members to cut loose from those organizations, both as sponsors and as examiners; and further to do everything possible to advise the public as to the necessity of regular examinations made by their regular physicians. It has also urged the profession to be fully prepared to make these examinations in a thorough and complete manner, keeping full records on standard forms, of the patients so examined.

Outside of the urging of these periodical examinations of supposed healthy people, the profession has of late been paying more and more attention to thoroughness in the routine examinations of sick people. This in itself has presented a problem, and has at times brought more or less criticism. It would seem that some doctors and groups of doctors may be doing unnecessary examining, may be putting every patient "through the mill," so to speak, whether necessary or not.

This brings up an exceedingly difficult question. Every ill person should have a Wasserman done. A blood count is frequently necessary.

When should we not do a blood sugar examination? Test meals, duodenal lavage and X-ray examination of stomach and intestines are often needed. We simply have to use our common sense and do what seems best. We never regret a full examination, but often regret an incomplete one. Undoubtedly the younger members of the profession are depending too largely on labor-

atory, X-ray and other aids, and are neglecting common sense and reasoning power. A complete history and general examination should be the principal requisites, with the others as adjuncts.

The Problem of Public Health Work

Those members of our profession connected with public health work, local, state and national, have undoubtedly brought about radical improvements in community health, a much better understanding on the part of the people, and greatly lessened the sickness and death rate.

So far so good! In their enthusiasm they have, however, gone so far in their clinic work, including both diagnosis and treatment, as to make the conservative part of the profession feel that we were bordering close on to State Medicine. Dr. Bigelow of Columbus has most wisely sounded a note of warning. The regular doctors of every community are ready and willing to care for the indigent and helpless, through regular institutions or special clinics, and should be advised and permitted to do so. If in certain sections they need help, it should be offered to them by the state or by other communities.

The holding of clinics by the State Health Department frequently upsets the confidence of the community in their regular medical attendants, encourages people of sufficient means to make free use of the facilities offered by the State, and creates a sentiment favoring State Medicine. The American Medical Association has repeatedly warned against this tendency, and on several occasions has advised strongly against projects proposed by well-meaning enthusiasts in public health work.

The Problem of Medical Education

Twenty-seven or twenty-eight years is too old an age for the average doctor to begin practice, much older than the other professions. Time can and should be saved in Grammar school, high school, college and medical school. Dr. Pusey of Chicago, in his address as president of the American Medical Association, advocated a three year medical course with a year in an approved hospital. The writer has, during the past two years, introduced two resolutions in the House of Delegates of the American Medical Association, both of which were given favorable consideration. One was for a commission from the various departments of education mentioned above, to study and report on a plan to cut down the time, enabling the student to graduate in medicine at an earlier age; and the other to allow credit for medical courses taken during the Summer months. The Council on Medical Education, with its various aides, is giving a great deal of time and study to this subject.

There is a general feeling prevailing that the medical course itself should be shortened, and that it should not cover so much ground, confining itself more to the essentials and omitting much of the work which belongs to the various specialties, and which must of necessity be taken up later by those graduates who plan confining themselves to special lines of work. There is a feeling also that our present plan of medical education unfits men for general practice, or at least makes them feel dissatisfied with that kind of work, especially in the country.

One of the chief problems of country practice has been the totally inadequate compensation afforded the average practitioner. This difficulty in a way is, to some extent, reaching a solution. The country people are realizing that unless they do pay their physicians properly and promptly, they will soon be without medical aid. An excellent plan, already adopted in some sections in securing a much needed doctor, is for a group of residents to guarantee him a certain annual income. This arrangement has worked admirably. The guarantors have, in each instance, so insisted upon prompt payment, that they have never been called upon to make up a deficit.

The Cancer Problem

The problem of the steady and rapid increase in the prevalence of cancer is a most serious one which can be solved only by the active cooperation of the entire profession and *especially those in general practice.* The situation is not only alarming but most unreasonable when we realize that although cancer is preventable or curable in 90 per

cent of the cases, yet at best only 10 per cent are being saved. It is strange that unlike tuberculosis, cancer education does not seem to be popular with the profession or the people. The increasing interest being taken in periodical medical examinations is already showing results, and that together with the splendid work of the American Society for the Prevention of Cancer, will no doubt, in a short time lessen cancer in certain parts of the body. We have, however, made no progress in the education of the women of the country as to the necessity of being regularly examined to look for diseases of the genital organs, and especially those conditions which so often lead to cancer. Cancer of the uterus stands second to cancer of the stomach in death rate, claiming more than 12,000 victims annually in this country. Practically all of these are preventable deaths.

In the 80's and 90's, due to the splendid work of Sims, Emmett, Thomas, Munde and others, Gynecology was very popular with the profession. Since Gynecology has been taken up by the general surgeon, the so-called minor ailments have been much neglected. Sims' speculum and position were formerly essential in practice. Through questionnaires sent out by me during the past two years, I found that but few men use them now and even the colleges have practically given up the teaching of Sims' methods. This is a lamentable error, which, with the assistance of yourselves and others, we hope to have corrected. The basic cause for the failure of women to be properly and thoroughly examined lies in the *crude and indecent methods* nowadays employed for such examinations.

Dr. Sims' book published in the 70's laid great stress on the necessity of examining women in the *most refined and modest manner.* Indeed the invention of his speculum and development of his position, the left latero-abdominal, was largely for the purpose of making the examination in the least possible disagreeable manner. To quote his own words:

"It has been objected to this speculum that its use requires the assistance of a third person. Apart from its real value, *there could be no stronger reason for its universal adoption. I insist that a third person should always be present on such occasions. Delicacy and propriety require it and public opinion ought to demand it.*

"I am sure that I never made a vaginal examination or used a speculum a dozen times in my life without the presence of a third person. * * * We are too apt to disregard the innate feeling of delicacy when we have been so much used to hospital practice; but we can never make a mistake if we always cultivate the same gentleness and kindness towards the poorest hospital patient that we would use toward the highest princess. We should never in our examinations *allow any exposure of person,* not even in hospital practice. When the touch is made, this can be done, of course, with the patient on the back covered with a sheet. When the speculum is used, we should see only the neck of the womb and the canal of the vagina."

We can never control the ravages of cancer of the uterus until we get the general practitioners to look upon Gynecology as a vital part of their work, pay more attention to it, take post-graduate instruction in its technique, closely question all of their women patients and teach them to apply for regular examinations as needed.

At such examinations the doctor must have the assistance of a woman office attendant, make the dorsal examination entirely under cover, and use the Sims' speculum and position, also practically under cover, for the further investigation. We must always remember that profuse menstruation, menstruation out of time, and after the menopause, and also leucorrhea are *always dangerous signs.*

What a wonderful thing it is, and such a simple one, to be able to take a woman who has a simple condition, recognize it early, and by treatment prevent an incurable and fatal disease. And also to be able to recognize cancer in its early and local stage when it can be cured. *Practically every physician can do this thing almost daily if he will but interest himself in this simple but vital work.*

The Problem of the Quack, That "Vulture of Evil"

Isn't it a strange thing that in these enlightened times, when medicine has at last been put on a scientific basis, when the profession is doing so much to prevent sickness, save lives and lessen suffering, and steadily increasing longevity; that the irregulars should flourish as they are doing in many sections?

I believe that the fault lies largely with the regular profession in that the proper attention is not being paid to the various complaints and so-called "bad feelings" of the patients. Our scientific investigations as to the causes of these complaints, and prompt steps to remove these causes, are necessary and proper. But the result of the causes, the aches and pains and discomfort, do not always promptly disappear. There is the weak point in the therapeutics of today and it is on that point that the quack gets the advantage and lays most stress. He does everything possible to make the patient "feel better," and so builds his reputation.

Physiotherapy is undoubtedly a dangerous tool for the profession. There is so much in it bordering on quackery that the modern internist fights shy of it almost entirely, and yet it offers much that is good and proper, and should be more widely employed in a strictly ethical manner.

The only way that the quack really hurts the profession is by upsetting the confidence of the people in their regular doctors. He does, of course, untold harm to the public, and especially those who are ignorant and superstitious. The success of the quack depends largely on advertising, at which he is a "past grand master," and on misrepresentation. It is just as much our duty to protect the public against quackery as it is to educate them in regard to preventable diseases. Those doctors who advocate a "do-nothing" program, letting the people have what they want, and "get their dose," are wrong. The best way to counteract quackery, professionally, is to give better service to our patients, looking after them continuously in a sympathetic and personal manner, using every means at our disposal, until they are entirely restored to good health and happiness.

We should also through our various organizations educate the people, and the representatives of the people in the legislatures, as to the vital necessity of requiring that no one should be allowed to treat sick people *without being properly educated.* That is the strong point in the fight. It is not difficult to explain to the lawmakers that it is a most dangerous thing to permit uneducated people to call themselves "doctors," and treat the sick, when they do not understand how to examine or how to diagnose. In addition to that it is not right to demand strict educational requirements of the regular profession (for no other reason than the protection of the public), and not require the same basic training for all others who offer to treat the sick.

In Virginia recently, before the Legislature, the irregulars, employing prominent and very expensive representatives, waged a hard fight for recognition. Prominent educators of the State upheld the regular profession in demanding the necessary educational qualifications. This appealed strongly to the lawmakers, as did also the record of numbers of serious cases treated by the irregulars, without diagnosis, until too late to be saved. The task of completely defeating the irregulars was made much more difficult on account of lack of organization in many sections of the State, especially the sparsely settled regions.

It is inconceivable to the thoughtful men why the doctors in every section do not organize. Even if they meet only once a year, a skeleton organization in each county could be made a power for good. In those very sections the doctors as a rule are the most influential members of the community, taking part in all principal activities. But they are most negligent as regards their own organization. There should be in *every county of every state,* a county medical society, and also a woman's auxiliary in active cooperation. In many states, the women's auxiliaries are doing splendid work in cooperating actively with the medical

societies in social, welfare and community efforts. The women members of the doctors' families have great influence in the communities and can do much to mould and direct public opinion.

The strength and effectiveness of the state societies depends entirely upon the activity of the many county units, and at the same time the power and influence of the various state organizations is what makes for the strength and power of the great American Medical Association.

Problems of Surgery

In surgery also there are serious problems which need much thought and cooperation to solve. The American College of Surgeons has made great strides, but the work is still in its early stages with much to be accomplished. Both the profession and the public owe a large debt to the earnest men who have given freely of their time and energy to the task of standardizing surgery. Adverse criticism is most unjust and uncalled for. The profession must work unitedly for the practical ideals of the College.

The brick and mortar part of the hospital is necessary, but the responsibility resting on all connected with the institution for good and safe service is the foundation of stone. Surgery should be done only by safe surgeons. The unsafe ones, should, however, be aided and encouraged to study and develop so as to become safe. The public has to some extent been educated along these lines, but the responsibility still is with the profession. No hospital should be permitted where the trusting patient entering its portals shall not always receive scientific and safe attention.

One of the unsolved problems of surgery is that of operating room conduct. Formerly in each large hospital there was usually in surgery one dominating figure, who realizing that technical success in surgery depended largely on the management of the operating department, directed its vital details with the greatest strictness and precision. Now instead of one such man there are several good surgeons, with no one man directing or dominating. The result is that the details are left to the nurses. The prevalence of infection following clean operations is due largely to such conditions. Infection of clean wounds is a crime and a severe reflection on the surgeon, on whom the responsibility rests, and which he cannot shirk. He should not rest until the source has been found, and a recurrence made impossible. Surgical cleanliness is such an elementary and simple matter, that the vital necessity of strictness in every detail is overlooked. The remedy lies in selecting from the staff a surgeon who is thorough and enthusiastic and giving him authority to supervise the operating room and all its workers, including the occasional careless surgeon. This involves a deep feeling of responsibility and an abundance of tact.

IN CONCLUSION

In these imperfect remarks we have covered quite a field, possibly too wide a one, and yet have discussed nothing new.

These are, however, important matters, many of them vital.

We cannot confer about them or think about them too much.

We have a wonderful calling, with opportunities abounding, to help our fellow man. Our responsibilities are great, at times overwhelming.

But for our intense love for the work, and our abiding faith in success, we could do but little.

To give the best that's in us, and to make ourselves always fit, is a necessity; but over and beyond that our duty is plain to guide the people in the right path.

We of the profession must come closer together, lean more upon each other, cooperate whole-heartedly, and our task will be greatly lightened.

We are already reaping our reward in the wonderful satisfaction of knowing that we are helping to materially prolong life and greatly lessen suffering; and that man has been made happier and the world better by our efforts.

SYMPOSIUM ON GOITER *

Classification and Differential Diagnosis of the Common Forms of Goiter, and Discussion of the Iodine Problem.

By D. M. AIKMAN, M. D.
Wheeling, W. Va.

THE PROBLEM OF GOITER has been one of the most discouraging, and difficult trials of the medical profession. For years the internist has been disappointed by the uncertain response of his goiter patients to internal medication. Likewise the surgeon has been chagrined by the frequent failure of his bravest efforts. Within the last five years we have come to a clearer perception of the goiter problem and a keener appreciation of the many pitfalls into which we formerly stumbled. The internists have studied goiter very intensively during the last two decades. Not only have they contributed substantially to our knowledge of the causes and consequences of the disease, but they also have accomplished a great deal in the prevention, and the treatment of the simpler forms. However, the surgeons, appropriating the best the internists had to offer, have placed themselves in a position to handle the severe forms of goiter more successfully than ever before. The work of the internist, Plummer of the Mayo Clinic, gave to surgery a new conception of the proper classification of goiters, out of which a new era in goiter surgery has developed. These recent advances have taught the surgeon first how to make an earlier and more accurate diagnosis; second, to have a better appreciation of the surgical risk in individual cases, and third, how to give the patient better pre-operative and post-operative care, thereby reducing the mortality to a point where goiter surgery is robbed of many of its terrors.

Realizing that the differential diagnosis of the various forms of thyroid disturbance is the key to the successful treatment of this malady, we feel that it is necessary at the beginning of any discussion on the subject to decide upon a workable classification. Therefore for purposes of convenience and clarity, we have arbitrarily decided to group all of the COMMON diseases of the thyroid under three headings. This division is based both on pathological and clinical findings. It does not include the rare forms of thyroid disturbances, such as carcinoma, sarcoma, thyroiditis or foetal adenoma. The classification which follows was decided upon after long consideration and we feel that it not only offers the most pleasing reconciliation between the divergent views of the surgeon and the pathologist, but that it also offers us a most satisfactory approach to accurate diagnosis and rational treatment. You will see at once that this classification falls in line with that advanced by Plummer, which has been widely accepted as authoritative in recent writings on this subject.

Simple Classification of the Common Forms of Goiter

1. Simple Hyperplasia or Colloid Goiter;
2. (a) Non-toxic adenoma; (b) Toxic adenoma.
3. Exophthalmic goiter.

First Group: Simple hyperplasia or Colloid goiter.

Simple hyperplasia or colloid goiter is definitely a goiter of youth. Probably it is never seen in persons beyond the age of 30 or 35 and occurs most frequently between the ages of 15 and 25. In this group are included the so-called adolescent goiters, the type which usually produces the uniform fulness of the neck, so often seen in young

* Presented in the fifty-ninth annual meeting of the West Virginia State Medical Association, Morgantown, May 25, 1926.

women. Simple hyperplasia may also occur with pregnancy and at times during menstruation. The increase in the size of the gland is not permanent. In most instances there is a retrogression very shortly after the physiological strain has been removed. This phenomenon is most noticeable in the goiter of pregnancy. However, it is not likely that any of these glands return to an absolutely normal condition. On the other hand we note that the enlargement is very prone to recur, with each successive physiological strain, as in the case of multiple pregnancies.

Microscopically there is a slight increase in vascularity, slight hyperplasia of the cellular elements, and frequently a marked increase in the colloid material. Clinically it is recognized by the symmetrical enlargement of both lobes and of the isthmus of the thyroid, and by the characteristic soft granular feel it imparts to the palpating finger. In many instances it produces no symptoms beyond slight nervousness or worry over the knowledge of the fact that it exists. However, it is occasionally associated with unpleasant symptoms, such as tachycardia, nervousness or a sensation of pressure from fulness in the neck. At times it may so resemble the exophthalmic type, that the differentiation is quite difficult, especially if vasomotor symptoms and bruit are present.

It is in this type of goiter that we may expect to obtain the most satisfactory reduction in the size of the gland by the administration of iodine or thyroxin, and consequently simple hyperplasia or colloid goiter should be considered a medical, rather than a surgical condition. If the enlargement does not disappear under proper medical treatment it probably indicates that we are dealing with one of the mixed types, in which simple hyperplasia is associated with adenomatous hyperplasia.

Second Group: Adenomatous goiters with or without toxic symptoms.

In this group we include all of the adenomatous enlargements of the thyroid gland. In the strictest sense, the term "adenoma" should be reserved for those benign glandular growths, which are contained in a definite capsule, but we wish to include in the classification not only the cases which present definitely encapsulated adenomata but also those cases in which we find numerous microscopic areas of adenomatous hyperplasia without gross encapsulation. The adenomatous tissue may be confined to a single large growth which is easily recognizable or may be distributed throughout the gland in numerous small nodules. In the later case the granular irregularities in the surface of the thyroid can only be appreciated by the highly trained fingers of an expert. The typical case of adenoma is usually discovered after the age of 35 and we are prone to think of it as a disease of middle life. In view of the pathological picture just described it is probable that the adenomatous nodules are present in the adolescent goiter, and are ignored until a time in later life when they begin to enlarge. Upon inquiry we find that most of these patients noticed a primary enlargement of the thyroid between the ages of 15 and 20.

Microscopically it is impossible to differentiate between the toxic and non-toxic varieties of adenomata. There is a moderate increase in the cellular elements and the structural arrangement is typically glandular. Definite acini can be made out in every part of the adenoma. The most characteristic feature is the encapsulation of a large or small group of acini within a fibrous tissue wall. This segregation of the adenomatous tissue suggests the possibility that adenomata arise from embryonic rests. We find microscopic evidence of degeneration in some of the older adenomatous nodules, due to hemorrhage within the capsule. According to the degenerative changes which supervene several unusual varieties of goiter have received their names, *e. g.*, the hemorrhagic, the cystic and the calcareous goiters.

The non-toxic goiter is characterized by no symptoms beyond those of a tumor. The pulse and basal metabolic rate remain normal. The patient may seek relief on account of the unsightly appearance of the enlarged gland, or on account of unpleasant symptoms produced by pressure upon the trachea, esophagus, or other structures of the neck. These symtoms are enhanced if the adenoma

happens to slip down behind the sternum.

Substernal goiters are practically always adenomata. When the physicians is told by the patient that he formerly had a goiter which suddenly disappeared, the diagnosis of substernal goiter is easy. In other cases a clue to the presence of substernal goiter in a patient who complains of dyspnea, dysphagia or other signs of thyroid disturbance, may be found in the unusual enlargement of the superficial veins of the neck, and thorax. The signs and symptoms pointing to a substernal goiter may be quite convincing but the X-ray is depended upon to confirm the diagnosis.

The most important consideration in connection with non-toxic adenoma is the fact that it is potentially a toxic adenoma, for it does not always remain simple and innocent. Roughly speaking 25 per cent of all patients with adenomata who present themselves for treatment have symptoms of hyperthyroidism. Therefore, we have placed the toxic and the non-toxic in the same group, because we feel that the non-toxic is simply a forerunner of the toxic adenoma.

What makes them toxic? We do not know what disturbance in metabolism or what upset in the endocrine mechanism is responsible for this change. However, we do know that in some cases the injudicious use of iodine precipitates this disastrous result.

Let us consider iodine for a moment. Centuries before the development of modern medicine, centuries before the recognition of iodine as a chemical element, our ancestors who were unfortunate enough to develop "big necks" betook themselves to the seaside, in the hope of obtaining some measure of relief. Those of them that had a colloid or exophthalmic goiter obtained some benefit. They were practicing empirical medicine when they lived at the seaside, breathed the air from the sea, and inhaled the smoke from the burning sea sponges and kelp. In this way they received their daily quota of iodine. That was fine for those who needed it. Certainly there were many who did not need it, and to whom it was harmful. We would like to know how many non-toxic adenomata were converted into toxic adenomata and how many toxic adenomata were excited to more deadly activity!

Up until a few decades ago we did not use iodine with any more discretion than our barbarian ancestors at the seaside. The pendulum of opinion swung in the opposite direction when Kocher advised the medical profession against the use of iodine in any and all forms of toxic goiter. Just within recent years have we come to the understanding that iodine is just as useful in the treatment of colloid and exophthalmic goiters as it is dangerous in the treatment of adenomata.

From every clinic where goiter work is being done there come reports of toxic adenomata which have been excited by the administration of iodine. In our clinic we have had a number of toxic adenomata which developed from non-toxic adenomata, on account of the use of the very popular IODINE TABLE SALT. There would be no way of estimating the harm that has been done to these unfortunate patients by the use of the so-called BLANKET CURES for goiter which are on sale in our drugstores and advertised in our newspapers.

The value of small doses of iodine in the prophylactic treatment of goiter in our schools has been definitely established by the work of Kimbal and Marine. We feel that a physical examination, to determine the presence of thyroid pathology, particularly adenomatous nodules, is a very necessary requirement in connection with the routine administration of iodine to school children. However, we do not feel that the minute doses which are ordinarily given to the children are apt to do harm. On the other hand, the administration of small quantities of iodine to the public at large, as for instance by adding it to the water supply, is just as much to be condemned as the general use of iodine salt. Iodine causes trouble in the patients who have adenomata. Adenoma of the thyroid rarely develops before the age of 25, and the likelihood of toxic changes increases every year thereafter. Therefore we should be most careful in the administration of iodine to patients beyond the age of 25, and it should be strictly avoided in

the treatment of any patient suspected of having an adenoma.

Toxic adenoma presents a chain of symptoms, so closely related to those of exophthalmic goiter that the two conditions were not recognized as separate entities prior to 1922. According to the modern conception of the goiter problem, the clinical distinction between toxic adenoma and exophthalmic goiter is of the utmost importance in as much as they demand entirely different methods of treatment. With this point in mind we shall take up the symptoms and signs of toxic adenoma along with the discussion of exophthalmic goiter, which is our next and last classification.

Third Group: Exophthalmic Goiter.

The advanced case of exophthalmic goiter in which the exopthalmos is prominent can be recognized by the shoe-maker. Few of us fail to make a correct diagnosis when the patient presents the four cardinal signs —exophthalmos, tachycardia, tremor, loss in weight. On the other hand there are many cases in which the eye signs are either absent or not easily recognized. The tremor may not be pronounced, and the increase in pulse rate is negligible. Occasionally gastrointestinal symptoms are so pronounced as to distract attention from the commoner signs of hyperthyroidism. Many of our chronic cardiac patients, neurasthenics, and so called "dyspeptics" are in reality suffering from an unrecognized hyperthyroidism. The physician who looks for the early manifestations of thyroid disturbance and continually keeps in mind the protean possibilities of hyperthyroidism will be rewarded by discovering many cases that are ordinarily overlooked.

It is an interesting fact that the pathologist can make as accurate a diagnosis on microscopic examination of the patient's goiter as the clininician can make from the physical signs and symptoms. In few instances are the clinical signs and pathological findings so accurately correlated. The microscopic picture is one of riotous overgrowth of the parenchymatous cells. It is characterized by cellular hypertrophy and hyperplasia with the formation of papillary projections into the acini. Colloid is notable for its absence and the vascularity of the gland is greatly increased. The microscopic picture explains the solid meaty appearance of the cut section of such a goiter.

We have previously referred to the beneficial effects of iodine in exophthalmic goiter. The routine use of Lugol's Solution is invaluable in pre-operative preparation. It will often render safely operable a case which without such treatment would inevitably result in a surgical tragedy. We have noted a very interesting fact in connection with the pre-operative use of iodine. Just as the patient's symptoms subside in response to the iodine, the microscopic picture changes from the luxuriant hyperplasia of the exophthalmic type to the simple hyperplasia of a colloid goiter. This very striking and interesting observation has received as yet but scant mention in the literature. This fact was brought to our attention after we adopted the routine use of Lugol's Solution as a pre-operative measure. Following the adoption of this procedure we were greatly surprised to find that our pathologist reported simple colloid goiter, after examining specimens from our most typical exophthalmic cases. Heated arguments between the surgeons and pathologist ensued until the cause of the change in the microscopic picture dawned upon us.

In contrast to the gradual development of toxic symptoms in adenoma exophthalmic goiter may have a very stormy onset. In many cases it comes with dramatic suddenness, following in the wake of an infection or a severe psychic shock. Following the recent epidemic, clinical observers made note of the fact that many of their patients dated the onset of their symptoms back to an influenzal attack. Recently one of our colleagues recited to us three very striking examples of the development of exophthalmic goiter after psychic shock.

In the first instance a woman was accidentally locked in the refrigerating room of the hospital. It was several hours before the accident was discovered and she was released. In the meantime she became hysterical with the fear that she might be left there indefinitely. In the second case a woman witnessed an attack upon her husband by an infuriated negro. She assisted

her husband as much as she could and saw him beat the negro to death with a large stone. Such an experience would certainly be a tremendous shock to any sensitive nervous system. The third case was that of a woman in a hospital convalescing after an operation. An old gentleman with a long beard, who was otherwise not very prepossessing, occupied a room on the same corridor. On account of some prostatic trouble he made numerous nightly trips to the toilet. On one occasion he became confused. Entering the wrong door he came up to her bed and started to get in with her. You can easily imagine her terror when she awakened and saw the old man hovering over her. In each of these instances, the patients referred to, immediately developed pronounced symptoms of exophthalmic goiter.

We now come to the differential diagnosis between toxic adenoma and exophthalmic goiter—*a subject which is of paramount importance in the rational therapy of goiter.* In order to emphasize the more important clinical aids in the differentiation of these two conditions, we have prepared the following outline of the more prominent signs and symptoms:

The Age: As a rule toxic adenoma is found in persons past middle life, while exophthalmic goiter usually occurs before middle life. Dr. Crile has reported exophthalmic goiter at the age of seven. However, both varieties may occur at any age.

Onset and Course: The patient who has a toxic adenoma will tell you that she has had a goiter for a number of years, but that she had no trouble with it prior to the last year or so, and that all of the symptoms have come on gradually. In the exophthalmic type, on the other hand, the onset may be very sudden, following some severe illness or physic shock or it may come on more slowly. If the patient is fortunate enough to weather the storm of the initial period of toxicity there is usually a spontaneous remission, but the patient is liable to recurrent attacks, with a rise and fall in the severity of symptoms, at varying lengths of time.

Exophthalmos and Other Eye Symptoms: As a rule they are absent in toxic adenomata, and present either unilaterally or bilaterally in exophthalmic goiter.

Loss in Weight: In toxic adenoma the loss in weight is gradual and moderate, while in exophthalmic goiter, corresponding

CLINICAL AIDS IN DIFFERENTIAL DIAGNOSIS OF:

	EXOPHTHALMIC GOITER	TOXIC ADENOMA
AGE	Any age—frequently before thirty-five years.	Usually after thirty-five years.
ONSET	May be sudden	Gradual-Previous history of nodulation.
COURSE	Recurrent attacks	Progressive
EXOPHTHALMIC AND OTHER EYE SYMPTOMS	Usually present	Absent
LOSS IN WEIGHT	Usually marked	Usually moderate
TREMOR AND OTHER NERVOUS SYMPTOMS	Present and usually exaggerated	Usually present to a moderate degree.
GASTRIC SYMPTOMS	Present	Absent
TACHYCARDIA	Marked	Present
THYROID	Soft or firm. Vascular. Bruit present. May or may not be enlarged.	Granular and nodular. Hard and enlarged.
SYSTOLIC BLOOD PRESSURE	Increased	Increased
B. M. R.	Marked increase. +50 to +75.	Increased. +30 to +50

to the degree of the toxicity and suddenness of the onset, it is usually rapid and marked, and accompanied by muscular weakness.

Tremor and Other Nervous Symptoms: Tremor of the hands and tongue, nervousness, irritability, hot flushing, and insomnia, usually appear at a late date in the adenomatous type of goiter and are moderate in degree, while they are among the early symptoms in exophthalmic goiter, and are usually pronounced.

Gastric Symptoms: Are usually absent in toxic adenoma. In exophthalmic goiter they are often present, and vary in intensity from slight nausea to severe and persistent vomiting accompanied by diarrhea and abdominal discomfort or pain.

The Thyroid: The thyroid gland in toxic adenoma is always enlarged. The surface is granular or nodular. It is often unilateral. In exopthalmic goiter, the gland is only slightly enlarged as a rule, and never reaches the tremendous size sometimes attained by adenomata. The gland is uniformly enlarged, firm to the touch, and in most instances a bruit may be heard over the upper poles.

Blood Pressure: Very valuable information can be secured from the systolic and diastolic blood pressure readings. In both of the toxic types of goiter the average systolic readings are higher than normal, ranging from 140 to 160 m.m. However, in toxic adenoma the diastolic pressure is increased, with an average reading above 90 m.m., while in exophthalmic goiter the diastolic pressure is not increased. It is practically never found above 90 m.m. and the average reading is between 70 and 80 m.m.

The Basal Metabolic Rate: The basal metabolic rate, which records accurately the degree of toxicity, in 95 per cent of cases, is increased in both types, but the readings will be found much lower in the toxic adenomata, ranging from +30 to +50, while in the exophthalmic goiters, the readings will range from +50 to +75, or even higher in the severer cases.

From this table you will readily observe that the differentiation between toxic adenoma and exophthalmic goiter may be definitely accomplished in the great majority of cases. It is frankly admitted that this outline is not complete, but we feel it is reasonably adequate and accurate. There will always be the extremely complicated borderline case, but this is a workable plan for handling 95 out of every 100 cases that present themselves.

In conclusion I wish to offer the following summary:

(1) Much newly acquired information on the subject of thyroid disease is available, and should be carefully studied by every physician interested in this work.

(2) Many of the chronic cardiacs, neurasthenics, and so-called "dyspeptics," if studied carefully, will be found to be suffering from thyroid disease.

(3) The differential diagnosis should be made between the various forms of thyroid disturbance before any form of treatment is instituted.

(4) We believe that all of the common forms of goiter can be classified correctly according to the simple outline previously given, which is as follows:

(a) Simple hyperplasia or Colloid goiter.

(b) Adenoma—Without toxic symptoms and with toxic symptoms.

(c) Exophthalmic goiter.

(5) In the past exophthalmic goiter and toxic adenoma have been woefully confused.

(6) The failure to properly differentiate exophthalmic goiter from toxic adenoma accounts for many of the disappointments in both the medical and surgical treatment of goiter.

(7) The administration of iodine to the general public, particularly to those over 25 years of age, is reprehensible.

(8) The administration of iodine to patients with adenoma is criminal.

SURGICAL TREATMENT OF GOITER *

By WILLIAM R. GOFF, B. S., M. D., F. A. C. S.
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ALL TYPES OF GOITER are not treated surgically and surgery is not to be considered the last resort in the treatment of this condition. It is a well known fact that the prophylactic use of iodine prevents simple, adenomatous, and colloid goiter, but as yet there is no known preventive measure for exophthalmic goiter. The types of operative cases are well defined: First, exophthalmic; second, adenoma with hypo-thyroidism; third, obstructive, that is, causing pressure on the trachea, esophagus, vessels, or nerves; fourth, malignant or potentially malignant; fifth, unsightly. In the exophthalmic or adenoma with hyperthyroidism the indications for operation are clean cut and imperative; that is, as soon as the diagnosis is made. It is true that exophthalmic type has periods of remission and acute exacerbations, but so far there have been no means of telling the onset of the fatal acute exacerbation, while the adenoma with hyperthyroidism runs a longer course and becomes progressively worse until operated upon or death results. The obstructive type may present symptoms of tracheal compression as evidenced by laryngeal stridor, so marked that a general anaesthetic is contraindicated and local or intratracheal is the anaesthetic of choice. Obstruction to the esophagus does occur in a small number of cases where the goiter surrounds the trachea. Pressure upon the great vessels of the thorax results from the intrathoracic goiter thus causing a dilitation of the veins of the neck and chest, also upon the recurrent laryngeal nerves thus causing a paralysis of the vocal chords with a change or loss of voice and upon the vagi causing a disturbance in the heart rate. The malignant type or potentially malignant, particularly fetal adenoma, occurs usually after 40 years of age; however malignancy does occur in the late twenties. Eight per cent of the fatal adenomata are malignant and in large series of cases two per cent of the adenomatous type are reported as malignant. The unsightly type in which the operation is done for cosmetic results is a justifiable procedure.

The continual mortality rate for thyroidectomy thirty years ago is given as 17 per cent but through the efforts of many surgeons, notably Billroth, Kocher, Halstead, Mayo and Crile, it has been lowered so that it is four times safer than the surgical treatment for appendicitis. In the larger hospitals where the indications are well defined in appendicitis the mortality rate is between three and four per cent. In the Mayo Clinic in 1924 the mortality rate in 1725 cases of thyroidectomies was 0.58 per cent. Crile has reported since 1922 a mortality rate varying annually from 0.5 to 0.75 per cent. In my personal series of 141 thyroidectomies I have had one death or a mortality rate of 0.7 per cent.

In the preoperative preparation of goiter patients a careful physical examination should be made in order to determine the damage to the myocardium. The functional tests, particularly for the kidneys, determines the operative risk of these patients. The Mosenthal test is of value but the phenolsulphonephthalein test of Garrity and Roundtree is to be preferred. With an output of 40 per cent or more for two hours the patient is considered a good risk as far as the kidneys are concerned. The basal metabolic rate should be determined in order to have the best index to the patient's condition for operation but it is not to be regarded as the means of determining the type of operation.

Rest in bed for several days has always proven beneficial to toxic cases with a high caloric diet free from stimulating foods and

* Second paper in Symposium.

drinks. Water is essential in the preliminary preparation of these patients and should be given in quantities of 3000 c.c. or more daily. Tincture of digitalis is given in doses of 2 c.c. every four hours and 20 per cent of the patient's weight in pounds is the number of c.c. indicated. This amount stabilizes the heart for the operative procedure and convalescence and increases the kidney function. The compound tincture of iodine (Lugol's solution) was first advocated by Plummer in 1922 and its use is well established in exophthalmic goiter. Its administration is limited entirely to this group of patients and should only be used when the patient consents to operation. The indiscriminate use of this valuable adjunct to surgery is preventing many patients from coming to early operation and complete cure causing them to go to the surgeon at a later date with myocardial decompensation and kidney function below par. In such cases the surgeon must wait and see the patient added to the medical mortality. Before Lugol's solution is given it is necessary to make a positive diagnosis of a hyperplastic goiter and this cannot always be made by exophthalmos because only 80 per cent of these cases have this sign. It is well to have a basal metabolic rate at first and repeat this rate after ten days' administration and see if there is a drop in rate, a gain in weight, a decrease of the nervous symptoms, and a slower pulse. The average dose given is ten drops three times daily and is tolerated best in a half glass of milk, however in the severe cases twice this amount may be given. The length of time it should be given before operation seems to vary with the severity of the disease, but the average which gave the best results in my series of cases was three weeks. The basal metabolic rate decreases from one-half to normal limit and the gain in weight from five to 28 pounds and there is marked improvement in the nervous symptoms, and in some instances the patient will say, "Why, operate when I am well?" Operation following this preliminary preparation is easier, because of the lessened vascularity of the gland and hyperthyroid crises do not occur. Preliminary ligation has been reduced to one-fifteenth and the convalescence period is shortened thus making quite an economic saving to the patient and the operability of this type has been extended. In adenoma with hyperthyroidism the use of Lugol's solution has not been found to be of any advantage even in the mixed type, that is, adenomata and hyperplasia.

Ether anesthesia cannot be recommended in goiter surgery. The choice lies between nitrous oxide combined with local, and local anesthesia. In my series of 141 cases inhalation anesthesia was used in one case, the remainder were done under procaine and wide awake, and this same number left the hospital. Local anesthesia is to be preferred in the "bad risk" patient and therefore every patient should have the benefit of the safest and best procedure.

The choice of incision has been settled long ago in favor of the low collar, which is parallel to the folds of the neck. Good exposure which is one of the valuable adjuncts of surgery is applicable here and is best secured by a mid-line dissection down upon the goiter and the transverse division of the preglandular muscles between transversely applied clamps. The amount of gland resected depends upon the type and size of the gland, however three-fourths to seven-eighths may be removed with safety. This margin of tissue should be left on the posterior and inner border of both lobes so as to protect the recurrent laryngeal nerves, and the isthmus and pyramidal nerves are removed completely. The anterior inner upper and lower portion of the capsule should be left because of the variation in the position of parathyroid bodies. Hemostasis is best secured by interrupted catgut. Good drainage is essential and a gauze pack inside a thin rubber tissue serves best, so that the gauze may be removed after 24 hours and leave the rubber tissue *in situ.*

The post-operative care consists in the intelligent use of morphine to keep the patient quiet and comfortable. Fluid intake should be more than 3000 c.c. daily and if not taken by mouth should be given by hypodermoclysis, bilaterally in the abdominal wall. Hematomata should be removed at once and hemostasis secured. Hyperthyroid

crises occur less frequently since Lugol's solution has been used, but they do occur in adenoma with hyperthyroidism and even in adenoma without hyperthyroidism and in such cases it is well to see that drainage is well established, fluids are taken in large quantities, and the temperature controlled by the application of ice bags or ice packs. The best treatment for tetany is to prevent it, and this is done by leaving the anterior inner upper and lower portion of the capsule, however when it does occur the hypodermic administration of para-thor-mone controls the convulsions and numbness.

Recurrences occur to all surgeons. The Mayo Clinic quotes 5 per cent and Crile 3 per cent. My observation on recurrent cases is based upon my memory of such and not upon an individual study of the cases; however it seems that all recurrent cases occur in those that have had the condition more than two years. It is to be understood that in operating upon an adenoma with hyperthyroidism that all adenoma must be removed in order to prevent a recurrence.

The results of thyroid surgery are excellent and the individual improvement is in proportion to the length of hyperthyroidism. The Mayo Clinic reports 90 per cent clinically cured, 5 per cent improved and 5 per cent unimproved.

In my 141 cases of thyroidectomies, 41 or 29 per cent were referred to me by physicians, six or 4 per cent were simple goiter, seventy-three or 51 per cent exophthalmic, and sixty-two or 45 per cent were adenoma with hyperthyroidism. Basal metabolic rates were taken on forty-five of the exophthalmic group and twenty-one on the adenoma with hyperthyroidism. The average rate was plus 45 in the exophthalmic and plus 36 in the adenoma with hyperthyroidism.

"Toxic" goiter, whether it be of the exophthalmic or adenoma with hyperthyroidism type, is purely a surgical disease. The simple and adenomatous goiter may be kept from increasing in size or slightly reduced by the oral administration of iodine up to the age of 25. After this period patients should not be given iodine, except preliminary to operation. No patient who has a goiter, has ever been cured medically and it remains for the research workers to produce a "goiter cure." Jackson showed a study of ten thousand cases at the Mayo Clinic in the adenomatous type, that 20 per cent came to operation or death when no "goiter cures" were used, and that 45 per cent came to the same end after the use of "goiter cures." Therefore the promiscous use of iodine salt, iodine in any form, thyroid extract or polyglandular products is to be condemned.

The medical care after operation is as essential as the operation, that is, the case should be returned to the family physician for observation with a strict regimen consisting of a good wholesome diet, free from stimulating foods and drinks, appropriate rest without business or household cares, for a period of six months or more or until the heart is within normal boundaries and rate.

CONCLUSIONS

1. All types of goiter are not treated surgically.

2. Exophthalmic goiter and adenoma with hyperthyroidism should be operated upon as soon as the diagnosis is made.

3. The use of Lugol's solution is well established and has reduced considerably the preliminary preparation, multiple stage operations, and convalescent period of the patient.

4. The promiscous use of iodine after 25 is to be condemned.

5. The medical care of patients after operation is essential to secure the best end results.

THE MEDICAL ASPECT OF GOITER *

By H. L. ROBERTSON, M. D.
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THE TREATMENT OF THYROID DISEASE, whether medical or surgical, depends almost entirely on iodine metabolism. The colloid and hypo-thyroid conditions, suggesting iodine starvation; the toxic adenoma, iodine intolerance, and the exophthalmic, iodine perversion.

The present method of giving school children or communities en masse, iodine or the general use of iodine salt without individual selection by competent medical advice is raising a storm of protest among the more advanced goiter students. This protest is for the reason that many colloid goiters harbor adenomatous rests, which are stimulated into pernicious activity by the ill-advised administration of iodine and other cases of fully developed nontoxic adenomas are rapidly precipitated into the toxic stage.

Toxic adenoma is increasing at a most alarming rate and it is estimated that nearly 50 per cent of this increase has been directly due to or exacerbated by the use of iodine or iodine salt. The use of iodine salt, which under the alluring promises of benefit as set forth in the advertising matter of the manufacturers, is gaining widespread popularity. No caution is given as to the quantity that may be used, the length of time it may be used with safety, the pathology in which it is contraindicated or the age of subject who uses it. The result is naturally an alarming increase of toxic goiters. Owing to the ever increasing number of irregular goiterous cases that have come to my notice during the past year, I have made it a practice of questioning as to iodine indulgence and have been amazed at the frequent admissions of having used iodine salt in the hope of benefitting a goiterous tendency.

In an article by C. L. Hartsock of the Cleveland Clinic, published in the *Journal of the A. M. A.* May, 1926, the subject of iodine salt consumption is taken up in detail, confirming my own less detailed observations. Jackson, in an article published in the *American Journal of Medical Science*, Vol. 170, 1925, has also called attention to the dangers of iodine, Briefly, there are two classes of cases presenting themselves, who confess the habitual use of iodine salt. First, those complaining of marked loss of strength and endurance, with emotional imbalance, restlessness and irritability. There is occasional tachycardia though the pulse resting is rather slow. The temperature is subnormal, and as a rule a low B. M. R., minus 10 to minus 12. Second, those confessing the presence of a goiter for varied lengths of time but which had given them no trouble until after using the iodized salt when frank symptoms of hyperthyroidism with increased B. M. R. occurred from one to twelve months later.

Iodine administered to a *normal thyroid*, if not administered too long, has a negligible effect. To a *simple colloid goiter* it is a specific, and has a gradual absorptive effect. *To an exophthalmic*, a remission from the active hypertrophic and hyperplastic state to the less active colloid state; though this is but temporary and relative. *To an adenomatous goiter*, activation.

Kendall has shown by experiments on dogs, that massive doses of thyroxin produces no more effect than small ones but the same quantity if given in broken doses over a period of days will eventually produce toxicity and death, even before the entire dose has been administered. When the adenoma begins its activated process, it seems to lose its power of delivering to the circulation only the necessary dosage for metabolic requirements. In other words, it leaks and in conformity with Kendall's findings,

* Third paper in Symposium.

the daily administration of excess thyroxin produces toxemia and death.

The use of iodine in schools to young children is limited to a short course twice a year, and in very small doses, probably insufficient in amount, or over a sufficiently long period of time to do material damage, but I do not approve even of this, unless the children have been individually passed on as fit subjects by a competent physician.

The use of iodine in water supply for general use or any other method by which there is unregulated distribution, is to be condemned in the strongest terms. By what right have we to do irreparable damage to a certain percent of the community in the hopes of benefitting the rest? By all means use iodine where it is definitely indicated, but by the same intelligence withhold it where not indicated; remembering that once the damage is done, withdrawal of the drug does not remedy conditions. The adenoma has in all probability, been precipitated into activation.

The colloid goiter may be prevented by treating it in utero by the administration of iodine to the expectant mother as has been indisputably demonstrated by Marine and others. This then is the great prophylactic measure against not only colloid but adenomatous goiters. It is for the obstetrician and not the surgeon or well meaning social welfare worker to reduce our alarming percentage of goiterous cases.

In early life the simple goiter may be advantageously treated by iodine but the danger of stimulating unsuspected adenoma after adolescence, makes it a questionable procedure after this period of life.

Colloid Goiter

Colloid goiter has been perhaps more mistreated than all the other forms combined. This is due to the incomplete studies made when the average case comes for medical treatment. These are medical cases, not surgical, and I consider the unnecessary removal of a normally functionating gland, unless it is producing pressure symptoms, a grave reflection on the surgeon. A few points if kept in mind, even though I repeat what has been said, will guard us against error.

In the first place, the appearance of the gland in most cases is sufficient to classify it. Second, the B. M. R. which is of the utmost importance, does not show the high percentages of the toxic forms of goiter. Third, the blood pressure does not show the characteristic phenomena of the toxic type. Fourth, the period of development. The average age when toxic manifestations of adenoma develop is 44; after years of the presence of a nodular tumor. Exophthalmic goiter is acute in onset and this is found mainly between 18 and 35; the toxic symptoms developing a few months after the enlargement is noticed. The colloid is mainly found in youth or has been present since youth.

Because a boy or girl is nervous, has rapid heart action and shows a large thyroid is no reason sufficient to condemn him or her to the operating table. A little study of the case may reveal unsanitary conditions at home, a turbulent life beset with worry and friction, burdened down with the strenuosity of school, social or business life, and there is nothing but a compensatory hypertrophy. All he needs is social adjustment, rest and reconstruction; not medicine or surgery. In this same class we must look for focal infections, especially septic tonsils and teeth. Unquestionably these are factors in some thyroid irregularities but how they affect the thyroid I am unable to explain but we do notice improvement in certain cases after focal infection has been cleared up.

It must be borne in mind that some of these glands are under functionating as may be demonstrated by their B. M. R. These cases do well on thyroid extract or thyroxin in addition to iodine.

Adenomatous Goiters

Nestling in the matrix of the thyroid, the adenoma may lie inert from the cradle to the grave; stirred into activity it has potentialities that threaten life itself. If encapsulated is easy of recognition, but in the unencapsulated form or adenomatoses often difficult to determine. Ninety per cent, or over, of malignancies of the thyroid develop from the adenoma and 60 per cent of these the pre-operative diagnosis is not made. I

believe we should consider all adenomatous goiters potentially malignant and advise our patients so. Non-toxic in its earlier existence, its host is usually indifferent to it, unless pressure symptoms cause sufficient discomfort to require medical advice. Then comes a day when toxemia is evident with the symptomatology we are all familiar with. Again the necessity comes for a clear-cut diagnosis.

In addition to the history, the general morphology of the gland, the circulatory and nervous disturbances, we find an almost invariable high diastolic blood pressure in contrast to the low readings of the exophthalmic type. This hypertension is of the utmost value as a differential symptom. The B. M. R. is high, running on an average of plus 40, not so high as a similar toxicity in a Graves' which may run from 50 to 100 and unlike Graves' does not show the rise and fall with the crises which is characteristic in that disease and does not exist in adenoma.

The condition is progressive and unimproved by digitalis and rest. There is but one remedy for this condition—surgery—and in our experience a too long preparatory treatment is a mistake. Operate as soon as possible.

In these cases I feel that in justice to the surgeon the larynx should be thoroughly examined before the patient goes to the operating table. So often due to pressure there has been permanent damage done to the laryngeal nerves that is later attributed to faulty technique of the operator by the patient and his friends.

Exophthalmic Goiter

It is small wonder that the general symptomatology of Graves' disease is often obscured by the startling cardiac phenomena. In no condition that I know of, is there found such a fury of heart action. It races and thumps the chest wall till it trembles. As a safeguard, all such cardiac cases should be sent up for B. M. R. study whether there are systolic murmurs or not, even though the classic exophthalmic syndrome is missing. Yet in spite of such alarming conditions, one seldom finds decompensation in the exophthalmic type but more often in the adenoma. When death occurs in early cases it is from toxemia and not passive congestion.

In a recent publication, Cabot brings out the following facts based on post mortem findings, the amazing discrepancy in ante- and postmortem findings of the heart. Hearts diagnosed, "Marked enlargement, myocardial degeneration, etc.," were found normal in almost every case. It would seem then, that providing passive congestion is not already present, our main consideration from a therapeutic standpoint is toxemia and less stress should be put on the heart condition.

The remarkable effect of rest and Lugol's solution are very familiar to us in the pacifying of a heart in thyrotoxicosis, and more or less confirms the postmortem findings of Cabot. Our preoperative treatment of exophthalmic goiter varies but little from that carried out in the majority of modern clinics. The degree of toxicity is estimated by several B. M. R.'s, but we no longer consider a high reading prohibitive to operation. Absolute rest of body and mind, secured if necessary by the use of luminal or the bromides, is essential. Lugol's solution is given in broken doses, 30 minims and upwards per diem, till the full therapeutic affects are noted and a dose of 30 minims given the morning of the operation. We consider this drug purely a surgical adjunct and not a therapeutic agent. We are also using Lugol's solution for a short time as a postoperative measure but thyroidectomized patients are peculiarly susceptible to the effects of iodine and caution should be used in prolonged use of it.

The dietary of exophthalmic goiter is one that requires intelligent consideration. Here we find a marked reduction in sugar tolerance, 0.5 to 0.7 grams per kilo, per hour and a reverse condition in hypothyroidism. Dubois, Sanger and Hun have shown however that the rate of sugar oxidation in patients with exophthalmic goiters is normal or even greater. There is therefore no relation between this and a diabetic condition. In the latter insulin is indicated, in the former contraindicated unless associated with true diabetes. Without going into detail then,

there is an increased combustion in relation to the B. M. R. and a faulty storage. Any food therefore which tends by stimulation to increase metabolism, burns up sugars at a proportional rate; in other words the sugar tolerance falls. Wilder has demonstrated that heavy protein diets stimulate metabolism to a marked degree. The caloric intake therefore in these cases should be high, from 3000 to 5000 calories or more as digestion will tolerate. High in carbohydrates and fats and low in protein or any other form of stimulating foods.

It is a mistake to allow postoperative cases to resume their former vocations too early. A system which has been shocked and disordered, strained and depleted by the withering fury of a thyrotoxicosis has not regenerated itself in a few weeks' time. Rest of body and mind are necessary for three months' time with ideal hygenic environment or even more time to complete restoration and then he should be warned against any excesses for an indefinite period.

Hyperthyroidism in Pregnancy

Hyperthyroidism is a complication to pregnancy and operative conditions which insures a stormy course. I am of the opinion that unless the operation is indicated by reason of imperative acute conditions, a thyroidectomy should first be performed or at least the thyrotoxicosis temporarily controlled before any operation, major or minor is performed. Death following even such trivial operations as tonsillectomy in the presence of toxic goiter is not uncommon.

Pregnancy with hyperthyroidism has long been a subject of discussion. Opinion is gradually favoring thyroidectomy in the early months being a safeguard to both mother and child. Better results are obtained by this method by a wide majority, than that of trying to weather the mother through a thyrotoxicosis.

Management of Thyroid Cases

In the management of thyroid cases whether it be that of a hypo or hyperthyriodism, we find from a diagnostic or general management of the case, the B. M. R. of the utmost value and consider it utterly futile to attempt the scientific diagnosis or treatment of these conditions without its consistent application. As the hyperglycemia is an index to the progress of a diabetic, so is the B. M. R. the index to the thyroid function. It is a functional test but purely relative. Our postoperative cases are followed as a check-up and are frequent telltales as to whether insufficient or excess thyroid tissue has been removed.

* * *

DISCUSSION

DR. H. G. STEELE, Bluefield:

Permit me to congratulate the program committee on getting young blood before the state society. These three young men should be congratulated upon their excellent papers. As best I can remember, they left out one thing upon which many specialists lay great stress, and that is the psychology in these cases before or during operation. One case that I remember seeing Dr. Crile operate on was a cranky woman about 35 years of age. I had heard him say that much depends upon the psychology. I saw him operate and some of the cases made a great fuss. I thought it was criminal. Then I remembered when he operated on this woman she became obstinate after one lobe was removed, and he told her to quiet down and cooperate or he would not remove the other lobe. She quieted down and he completed the operation.

Dr. Crile uses nothing but novocain, I think. He uses three-fourths of one per cent novocain solution.

One of the doctors spoke about the rubber drain. In many cases Dr. Crile uses flavin gauze. I should like to ask the doctor who spoke about giving iodine to pregnant women how are we going to determine when to give these women iodine. None of us want to give iodine to every pregnant woman.

DR. WADE H. ST. CLAIR, Bluefield:

I feel that this is a good opportunity to put our society on the map. All of these essayists mentioned the indiscriminate use of iodine, and I believe it would be well for this society to adopt some kind of resolution

condemning the indiscriminate use of iodine. All of us who are somewhat interested in the subject of goiter are overwhelmed at the present time with the cases of toxic goiter, both the exophthalmic type and the adenoma with toxic symptoms. This is undoubtedly due, as was brought out by the essayists, to the indiscriminate use of iodine. Since the first of the year we have operated on five cases of hyperthyrodism in men, and we have had three cases of hyperthyroidism which had been previously operated on, one eleven, one five, and one three years ago, which had become activated, probably by using iodized salt. Our records show that all of these cases had been using iodized salt. This has just recently been brought to the attention of the profession, and it would be a good time for the society to adopt some kind of resolution condemning the indiscriminate use of iodized salt.

DR. S. D. H. WISE, Parkersburg:

If I am not mistaken our State Board of Health was active in sending out literature suggesting the use of iodine salt. I wrote to ask if they did not think it dangerous to use it in such a general way and received a reply that the amount was too small to be dangerous. However, I feel that it might be dangerous in certain forms of goiter.

DR. JAMES R. BLOSS, Huntington:

In this connection, as editor of *The Journal* in the past, we absolutely adhered to the proposition of making every advertisement in *The Journal* conform to the requirements of the Council on Pharmacy and Chemistry of the American Medical Association. The Co-operative Medical Advertising Bureau accepted an advertisement of iodine salt, and, if you remember, an advertisement appeared in our journal several years ago for about six issues. The American Medical Association will have to change their plan on it, too.

DR. GOFF, closing the discussion:

I should like to answer Dr. Steele's question about using flavin gauze and packing cases. I happened to assist Dr. Crile in packing the first case that was ever packed with flavin gauze. That has been abandoned, because you do not get the post-operative hemorrhage and hematoma. The object of packing cases open is to prevent hyperthyroid crises by drainage. The crisis does not occur if Lugol's is used properly. I believe that will be proven. Many men are now closing the neck, and I believe Dr. Crile will eventually abandon it. I believe time will convince us that the neck should not remain open. Drainage is essential in all surgery, and particularly in thyroidectomy. As I mentioned in my paper, often in adenomata, we do have postoperative thyroid crises because of the lack of drainage. I remember distinctly helping pack a patient in ice after an operation for simple adenoma who it was discovered had a temperature of 105, and would evidently have died in a short time.

I want to say something about iodine salt. I congratulate Dr. Aikman on taking the stand that the administration of iodine in adenoma is criminal. There is no doubt of it. The larger clinics are proving it. It was proven by Dr. Jackson in 1921, and Crile and his workers are bringing that to the front. It is all right for pregnant mothers, and it is to be recommended for children that do not have an enlargement of the thyroid gland, but its indiscriminate use is to be condemned. We shall have to take that stand on it. That the Public Health Council of West Virginia will have to take that stand on this subject is absolutely without question, and a number of the physicians who have charge of the schools in this state are taking this stand already. I am glad to say that in Parkersburg our man is on that side of the question, and that they do not administer iodine to children that have goiter, but to those that haven't it.

Answering Dr. Steele's question, a pregnant woman should be given iodine in the second, fourth, sixth and eighth months, possibly continuing through the ninth month. The presence of an adenoma is no contra-indication for the administration of iodine to a pregnant woman. That has been tried in the large cities, and no toxic condition has resulted therefrom.

MEDICAL, X-RAY AND SURGICAL TREATMENT OF GOITER *

By E. P. SLOAN, M. D.
Bloomington, Illoinois

FOR THE PURPOSE OF THIS PAPER we will use our definition for goiter, which is, "goiter is the diseased portion of the thyroid gland." Taken in its broadest sense, this will include hypothyroidism. Under medical treatment we will include the consideration of prevention.

For thousands of years goiter has been recognized as a mysterious affliction causing deformity. Only within recent years has it been recognized that goiter is not only the cause of deformity, but often is the cause of cardiovascular changes, emotional or mental states (sometimes insanity), defective or abnormal development, exophthalmos, tremors, insomnia, weakness, etc.

Its distribution is world wide. No country is free from it. Bram of Philadelphia conservatively estimates that over five millions of the people of the United States are suffering from goiter, and that about half of them have no medical attention; or if treated at all it is by chiropractors, osteopaths, Christian Science, patent medicines, etc.

The largest number of deaths in any one general classification in the registration area of the United States has for several years been in that of cardiovascular disease. Eighty per cent of the cases of cardiovascular disease that we see are directly attributable to goiter. In addition to deaths so listed, there are also many that are listed under other causes such as apoplexy in which goiter has contributed to the shortening of life by its effects on the cardiovascular system.

Goiter is one of the most insidious diseases which attack man and animals. The sum total of its ravages throughout all ages and in all lands is still unrealised. Its victims are the most beautiful girls, the best mothers and the most famous athletes. It seems prone to attack those who are otherwise perfect.

This disease was formerly thought to attack only adults, but in recent years it has been recognized in children and even in infants. The same disease, degeneration or new growth when situated in other organs, does not have the same course and result as when situated in the thyroid, because the thyroid when diseased or the seat of degeneration, inflammation, or new growth, develops changes in function that affects seriously almost every structure in the body. Results of thyroid hypo, hyper or dys-function are so varied in kind and severity that the problem becomes one of great magnitude.

The goiter problem of today is not only that of the treatment of tumor in the neck, but includes prevention and early recognition and treatment before cardiovascular changes occur. On the general practitioner must fall the responsibility for early diagnosis and early treatment.

The reduction of mortality cannot be effected to any great extent by the efforts of the goiter surgeons. The reduction of mortality and invalidism from the effects of goiter must come through the efforts of the general practitioner, the man who sees them first.

Medical Treatment

Much always has been hoped for. Much has always been claimed for the medical treatment of goiter. In the light of our present knowledge what can be done with medical treatment?

First. Correct deficiencies. Important for prevention as well as for treatment.

* Read before the Kanawha Medical Society, Charleston, West Virginia, September 7, 1926.

(Iodine, calcium, phosphorus, potassium, iron, sulphur, et cetera. Also vitamin deficiencies.)

Second. Control infections. (Systemic and local.)

Third. Alteratives.

Fourth. Treatment of complications. (Goiter heart—Hyperadrenalism, etc.)

Careful attention given to general and focal infections, to adequate supply of iodine, calcium, phosphorus, iron, sulphur, et cetera, in food and water supply will undoubtedly greatly lessen its incidence.

Recognition of hypothyroidism is of almost as much importance as the recognition of hyperthyroidism. It changes the emotional states and reduces the efficiency of those afflicted. It is easier overlooked. Attention is often called to hypothyroidism by the characteristic heart shadow. The shadow from the heart of the hypothyroid patient usually shows a narrow aorta and a small vertical heart. The shadow of the heart of the patient with hyperthyroidism is usually more globular with increase in the size of the shadow of the aorta. The treatment for hypothyroidism is the correction of nutritional deficiencies and, of course, the administration of thyroid. Many of these patients have other endocrine dysfunction, such as hypogonadism or hypopituitarism that demands glandular therapy. One must not expect rapid improvement in hypothyroidism. A change of climate is often beneficial. A period of rest treatment with forced feeding is often essential.

Tuberculous patients should always be carefully watched for evidence of goiter, both hypothyroidism and hyperthyroidism. A tuberculous patient with a rather small vertical heart and a long narrow aorta should always be suspected of having hypothyroidism. Proper measures for the relief of the hypothyroidism will frequently be followed by rapid improvement. The symptoms and toxic effects of tuberculosis and goiter are nearly alike. They are often present together. If the patient can carry both loads, the removal of one will be attended by almost spectacular improvement. Every tuberculous patient whose pulse rate is higher than is consistent with his temperature curve should be suspected of having an active goiter.

Every patient having influenza, measles, scarlet fever, diphtheria, and the other acute infections, should be watched for signs of strumitis or thyroiditis for weeks and usually months afterwards. Every year we are able to trace definitely a larger percentage of our cases of active goiter to some systemic or focal infection. The enlargement often does not attain sufficient size to seriously impress the patient for some time after the infection has subsided. This late development of obvious evidence of the presence of thyroid disturbances is the reason that infection as an etiological factor has not received the attention that it deserves.

According to many eminent men in our profession, a deficiency of iodine is one if not the sole cause of endemic or simple goiter. There has been a steadily increasing interest on the part of public health authorities, physicians and the laity in what has been called the iodine treatment of goiter. Much publicity has been given it. The public has been led to believe that iodine is the treatment par excellence for goiter. But it is not generally clearly understood that only prophylaxis is contemplated, treatment being an entirely distinct subject, which had best be intrusted to the practicing physician. While iodine holds a definite place in thyroid therapy, its administration requires study and observation of individual patients as well as caution in application of the remedy, lest untoward results or permanent damage be inflicted. The public should be made to understand that iodine supplied to correct iodine deficiency is a nutritional procedure and not medical treatment at all. Calcium deficiency, phosphorus deficiency, iron deficiency are also of importance. Adequate amounts in the food supply of calcium, phosphorus, iron, vitamines, iodine and many other things are necessary for perfect nutritional balance.

No conclusive evidence has ever been presented that pathology in the thyroid gland can be influenced in any way by medical treatment, except as its effect can be altered by symptomatic treatment and by proper correction of dysfunction in other organs.

In Basedow's disease there is rapid metabolism and usually defective assimilation. Deficiency of calcium, phosphorus, potassium, sulphur, iron and iodine rapidly develop. As iodine is assimilated more rapidly than any other of the other basic constituents, such as calcium and phosphorus, and is perhaps more important to metabolism, correction of the iodine defect by administration of any preparation of iodine is followed by prompt symptomatic improvement in the condition of the patient. But when enough iodine has been assimilated to correct the iodine deficiency, no further benefit can be obtained by its administration.

The medical treatment of exophthalmic goiter or Basedow's disease is limited to the correction of iodine deficiency, calcium deficiency, phosphorus deficiency, etc., and the use of alteratives, rest and hygiene. Quinine, ergot, phosphorus and neosalvarsan are among the most valuable drugs. Small doses of thyroid administered over a long period of time has been thought to be of great benefit.

Simple Colloid, Endemic Goiter, Adolescent Goiter, Goiters of Pregnancy

A definite enlargement of the thyroid at puberty is a rather common occurrence. It is doubtless true that there is normally some enlargement of the thyroid at puberty. But the majority of definite enlargements of the thyroid at puberty are either simple colloids or endemic goiters or else are due to some local irritation. The local irritation may be due to fetal adenoma present in the gland. A fetal adenoma usually manifests itself at about the age of puberty by a large smooth increase in the size of the lobe in which it is situated. Unilateral enlargement at the age of puberty is usually due to this cause. This type of goiter, unless it becomes toxic and the clinical picture of toxic adenoma presents itself, requires no treatment until after the diffuse enlargement has subsided and the adenoma or other tumor is palpable, when it should be removed.

In the early stages of true endemic or simple colloid goiter, correction of all nutritional deficiencies, vitamin as well as chemical (especially iodine), control of existing infections and the administration of thyroid extract are indicated. If the condition does not promptly disappear, small doses of sulpharsphenamine should be administered intravenously. Small doses of mercury, given over a long period of time, is of all drugs the most dependable as a curative measure.

Active or Toxic Goiter

Simple, non-toxic goiter may be present for many years with apparently no other discoverable symptoms than the enlargement of the neck. The majority of them, however, finally become active or toxic. We have come to the belief that nearly all of them are activated by strumitis from some systemic infection like "flu," scarlet fever or diphtheria, or from some focal infection, teeth, tonsils.

In an earnest sincere effort to accomplish curative results, six years ago we treated a series of 190 selected toxic cases with X-ray and ten cases with radium. We arrived at the following definite conclusions:

Fractional doses of radiation will often stimulate the secretion from the gland and aggravate the condition. Insufficient doses will sometimes check the normal secretion from the areas of normal tissue present in the thyroid, and not check the toxic secretion from the changed or abnormal areas in the gland.

All thyroid secretion can be definitely and positively checked for a period of two or three weeks by massive dosage of radiation. The condition of the toxic patient can be confidently expected to improve for a period of from two to four weeks following a massive dose. The second treatment is about one-half as effective as the first one, and the third treatment makes them worse about as often as it makes them better.

Simple colloid goiter in its early stages can sometimes be greatly reduced in size by fractional doses of radiation combined with the administration of alteratives such as arsenic, iodine, quinine and mercury.

In the six years that have elapsed since that series of cases were treated, 162 of the 200 have been operated on without mortality; seven are apparently well without operation; 12 are invalids from goiter; nine have

died without operation; and the other ten have been lost track of.

As a dependable measure for cure of all kinds of well developed goiters, especially when toxic, we must rely upon operative interference. The development of minor preliminary operative procedures to tide the patient over a crisis and make future radical operation safe has contributed much to reduction of operation mortality.

In the multiple stage operation, the choice of anesthetic is of much importance. Patients usually dread and object to a second ether anesthesia. With local anesthesia, a patient is sometimes frightened or hurt, and dreads a second operation. With gas anesthesia, either nitrous oxide-oxygen or ethylene-oxygen, the patient rarely dreads a subsequent operation.

The development of the multiple stage operation has saved many lives. Many very poor risks can be carried along and their goiters completely removed with one hospitalization by multiple stage operation.

Several heart cases with decompensation are especially well handled with the multiple stage operation. Many of these cases can be operated on in this way that would take many months at least to get in condition for a complete radical operation at one time. The improvement following successful removal of a portion of the gland is often so prompt and satisfactory that it is surprising.

The improvements in technique of radical operation are, of course, important. In our first 1000 operations we encountered collapse of the trachea 47 times. In our second thousand, 38 times. In over 5500 operations, since we recognized the fact that the mechanics of delivery of a lobe is not dissimilar to that of a posterior vertex presentation in obstetrics; that to deliver the lobe you must have flexion, rotation, extension and progress; and having observed the mechanics of delivery, we have not encountered collapse of the trachea one single time, nor had to cut the muscles transversely.

By not cutting the muscles, the shock is not so great, the muscles are uninjured, the convalescence is shortened, the discomfort is lessened, the complete control of the voice is not interfered with, and the mortality is lowered.

The improvement in technique has made goiter operation almost a minor operation if done before complications, such as intrathoracic projections, decompensated hearts, etc., have occurred.

The successful preparation of the patient for operation has had much to do with the reduction of mortality. This in the main consists of correction of insufficiencies, iodine, etc., control of toxemia and safeguarding the heart. Minor operative procedures, such as ligations and injections, and the multiple stage operation have their life-saving place in severe cases. There is no other operation performed today in which the results are so uniformly satisfactory as the operation for goiter.

CONCLUSIONS

The correction of nutritional deficiencies and control of infections are the basis of prevention and are in large part the medical treatment of goiter. The public should be made to thoroughly understand that supplying iodine for the correction of iodine insufficiency is a nutritional procedure and is not medical treatment.

There is great need for standard nomenclature and definite standardization of treatment.

Notwithstanding the great value of nutritional and medical treatment, the main reliance in well developed goiter must be in the surgical treatment.

The two great causes of goiter are nutritional deficiencies, and infection. Every advanced or well developed goiter or toxic goiter means that nutritional deficiencies or some infection or both have been present and were not promptly controlled.

[We do not agree that 80% of Cardio Vascular disease is directly attributable to goiter.—EDS.]

MEDICAL ETHICS *

By R. W. FISHER, M. D.
Morgantown, W. Va.

THIS ADDRESS is hardly entitled to the name of a medical paper as it merely represents the result of random thoughts suggested to me originally by the request made some time ago, that something bearing upon the medico-ethical phase of our work be submitted to our local medical association at its meeting in January of last year.

This collection of notes is the result of that request and while it contains nothing whatever of a technical scientific nature, it does stress certain points having an important bearing upon medical work in general and some few of the many problems connected with practice in particular. Points and problems which might upon merely superficial consideration seem apparently to be of minor importance only, but which when massed in the aggregate, may assume the formidable proportions of a veritable modern medical Frankenstein, if by any luckless chance they be ignored, instead of being taken cognizance of, heeded and acted upon, with whatever degree of intelligence and amount of judgment and discretion we may individually and collectively possess, to aid in enabling us to formulate a satisfactory plan for the successful combatting and solution of certain perplexing questions, which we so frequently encounter in our routine work.

The present set of rules entitled "Principles of Medical Ethics" of the American Medical Association was adopted by the House of Delegates at Atlantic City, N. J., June 4, 1912, the details of which you are of course all thoroughly familiar with, and which consequently require no repetition on my part, in the form of any superfluous attempt to acquaint you with the same. My small efforts upon this occasion will be directed towards an endeavor to stress a few salient points bearing upon the general subject, which it is trusted may be of mutual interest to those of us here present, and especially to emphasize certain pertinent local problems with which we are all confronted, at times in our daily work, in contact with each other and with the public in general; problems which, by virtues of the very nature and character of our work, prove occasionally to be rather difficult of mutually satisfactory solution.

There can be no question of the advisability of charging an adequate fee for one's services, by which is meant of course, a fee commensurate with the character of the services rendered, the time required, amount of responsibility necessarily assumed and the ability of the patient to pay, in accord with his earning capacity and financial and social status. As "the laborer is worthy of his hire," likewise the doctor is entitled to his pay, and every medical man should endeavor to acquire the desirable habit of rendering statements for services to his patients at regular, definite, stated intervals and should make all reasonable efforts to collect his fees as promptly as possible under the ordinary circumstances influencing practise in general, though of course the occasional modifying influence of "circumstances altering cases" has to be taken into consideration, in the matter of charging and collecting.

My personal experience with medical collection agencies has been for the most part disappointing and unsatisfactory, as medical accounts by the time they are ordinarily placed in the hands of collection agencies, do not tend to improve with age, as good wine in this country was formerly reputed to do a short time prior to the closing years of the first quarter of the Twentieth century, and the rapidly aging medical account, all too soon acquires both the elusive qualities of the fugacious "will o' the wisp" and

* Read before the Tri-County Medical meeting at Clarksburg, W. Va., April 1, 1926.

those of the proverbial tenacious "hard nut to crack."

The desirability of greater uniformity in fees for similar services rendered, in any given community in general and in our own in particular, is certainly important and while an ancient problem, is nevertheless one deserving of especial consideration, and particularly as relating to our own local unsatisfactory lack of system in uniformity of fees.

A recent attempt to solve this pressing problem has been made in Washington, D. C., by the adoption by the local medical profession of a maximum fee standard, and as *"tempus fugit,"* we may in the not too far distant future acquire some information as to the utility or futility of this recently adopted plan. Greater uniformity in medical and surgical fees tends to promote better harmony in any local medical profession by creating a spirit of fairer, friendly competition, fostering a desire for closer association and more willing cooperation between its members, and last but not least, has a salutary influence upon the general public, by better satisfying them, and increasing their respect for the medical profession as a whole.

Gratuitous services are seldom appreciated by the laity, as a general rule, subject of course to occasional exceptions, and the charging of obviously too low fees, as an habitual practice, by any medical man, results eventually in the return to him, in the form of undesirable compound interest of more than a modicum of lack of appreciation and gratitude for his time and trouble, on the part of his patrons, the ill wind and contempt of his fellow practitioners and frequently the ridicule of both patients and physicians, thus producing in the course of time a reaction upon his unwise and unfortunate head closely analogous to the well known effects of the action of the far-famed Australian boomerang.

It has been said that "a word to the wise is sufficient," but unfortunately we do not all belong to that enviable class, hence the necessity of several words where one should suffice. The immortal Burns wrote: "Oh wad some power the giftie gie us, to see oursel's as ithers see us" which the mortal Twentieth century, present day medical man may appropriately quote, 'Oh would to God the gift were given us to feed ourselves as others fee us," without unpardonably offending the classics, in view of the ever-present pressing problem confronting us of high food and low fees.

It has been my observation and is my firm belief as the result of the same that the public appreciates the services of the medical man who charges a fair and reasonable, though somewhat higher fee, to those who can afford to pay it, but gives in return more time, attention and thought to his patients, and that they pay more willingly than in the case of the low fee man, whose work is apt to be as superficial as it is hurried, whose examination consists of the speedy "once over" and reveals nothing definite, whose diagnosis is seldom made, and then usually wrong, whose treatment is consequently of little avail and whose steadily mounting mortality rate bears mute testimony to the fact that "he who runs, has not read," nor may be added, has he taken time to observe.

Correct diagnosis is the keystone of the arch in the practice of medicine and constitutes that important factor in our work upon which the other various procedures depend, and by means of which we are enabled to make our deductions and arrive at certain definite conclusions, forecast a more satisfactory prognosis and institute a proper line of treatment, without which we are apt to be as much at sea as the mariner's mythical "Flying Dutchman." Accurate differential diagnosis is the most difficult measure to properly utilize intelligently, and to acquire facility in the use of all known methods which we employ in practice, and in the absence of its aid and employment much of our work becomes as "love's labor lost," resulting in waste of valuable time, confusion, inefficient treatment, and lack of satisfactory results. Hippocrates said some 2000 years ago, in his aphorisms relating to the art of diagnosis "Experience is fallacious, judgment difficult," but while judgment may be difficult, experience is not fallacious provided we make good use of it to sharpen our

senses of perception and our powers of observation, cultivating both these faculties as much as possible by means of the great aid which previous experience affords us.

"Snap shot" diagnoses are more often wrong than right and are as obsolete in this day and age as modern diagnostic methods would have been novel in the days of Hippocrates, several hundreds of years B. C.

Low fees mean insufficient history taking, incomplete physical examination, incorrect diagnosis and inefficient treatment, plus loss of the patient by the physician through one of four possible results—desertion, another doctor, death or quacks. Who among us would advise his patient to take an important prescription to a "cut-rate" druggist to have it compounded? Then why expect a patient to take his valuable body and treasured health to a "cut-rate" doctor, for the end result in either case would be dissatisfaction and failure to benefit the patient by depriving him of service, which after all is the prime motive in the practice of medicine. Unfortunately for the patient there are no guiding signs hung out in this Twentieth century, reading *"Caveat Emptor,"* "Let the buyer beware," and as a consequence the quacks, near quacks, cultists, faddists, pseudo scientists, medical renegades and all the other varieties comprising the motley and unsavory crew of semi-medical piraticai ignoramuses and half-baked, misguided, uninformed and uneducated enthusiasts, reap their undeserved rewards and take their annual toll of happiness, health and even life itself, from the poor, ignorant, credulous and deluded public; without compunction, regret, or any of those obvious signs of "qualms of conscience," which sometimes serve to modify or extenuate crimes committed against the public, which while of less importance to the community, are nevertheless given greater publicity.

The best means that we possess and which we should employ in our efforts to combat quackery and charlatanism are the rendering of as efficient services to our patients as we are individually capable, dealing frankly with them in our professional contact, thereby gaining their confidence and respect and cooperation, avoiding absolutely those objectionable methods to which medical mountebanks are so prone to resort, such as evasiveness, secretiveness, deceitfulness, hypocrisy, prevarication and the administration of inert, useless and antiquated drugs and obsolete placeboes. The assumption by a medical man of that attitude of vastly superior knowledge and mysterious air, intended to convey the impression of the possession of wisdom too profound to be imparted to, or understood by others, has no place in the legitimate methods employed by the modern, self respecting present day physician. The thinly veiled cloak of ignorance, which such practices denote and with which they are enveloped, is as readily perceived by patients as it is insulting to their intelligence, and even the limited intelligence of the present day moron suffices in time to penetrate the false guise. While P. T. Barnum once said that "the American people love to be fooled" and some unknown wag remarked that "there is a sucker born every minute," Abraham Lincoln also stated that one "can't fool all of them all the time," but the facile memory of the quacks seems to have quite forgotten that last celebrated saying.

The adoption of some means by which more or less permanent records are made and kept, of data relating to the history, physical examination, diagnosis and treatment of patients is not only a great convenience to the medical man from many standpoints, possessing both professional and financial advantages, but is a matter of duty to one's patients, and of mutual benefit to both parties.

The system or method employed is a matter of minor importance, each man having his individual preference for the forms used, manner of recording data, method of filing the same, etc., but the employment of *some form of card index or case record system* is a vital necessity to both doctor and patient in present day practice, if the former is to practice intelligently and the latter is to receive the benefits due him, in the form of that type of service, which aims to conform as closely as possible to the high ideals and increased efficiency advocated by the leading members of our profession. The benefits and satisfaction to the doctor alone, derived from the employment of some one

form of systematic record keeping, both from the professional and business sides of our work, are difficult to estimate, in comparison with the unsatisfactory results and loss of time and money, associated with the old system of visiting list, day book and ledger, and one is well repaid for the slightly increased work and time required, necessitated by the use of a modern case history method, by the greater personal satisfaction, increased interest in work and patients, and saving of money, avoidance of mistakes in account keeping, rendering of statements promptly and systematically and many other advantages too numerous to mention.

With regard to the question of division of fees, the reprehensible practice commonly termed "fee splitting" has no legitimate usage in present day practice and should be discountenanced and condemned. It is belittling to doctors who engage in it, a reflection upon the rest of the profession and unfair to the patient, being an unworthy means to accomplish a bad end. Every man should be desirous and willing to "stand upon his own feet" in the practice of medicine and surgery, and depend upon what worth and merit he possesses for making his livelihood, rather than to become dependent upon any form of modified species of bribery, which is so unworthy of the best efforts and high and honorable ideals of the best type of men in the world today, the modern practitioners of medicine and surgery.

Relative to the more widespread adoption of certain modern methods of utility in our work, it may be said that the more extensive use of *sterilized* rubber gloves in surgical and obstetrical procedures, should be insisted upon by both the profession and the laity, as a means of protection to the physician as well as to his patient, from the manifold sources of avoidable transmissible infection, the greatest of all agents in transferring contamination, and transmitting and disseminating infection, being the unsterilized human hand. Even the ordinarily benign, normal or habitual inhabitants of the superficial layers of the skin, commonly known as the Staphylococcus Epidermidis Albus, is capable of becoming a malignant parasitical invader of other body surfaces, cavities and organs, when transferred to them from its natural habitat, an ever present menace in its potential possibilities of creating infection, just as the colon bacillus, a natural resident of the colon, may be relatively harmless (or as is claimed by some, actually beneficial) in its customary environment, is prone to produce severe and frequently fatal infections when transported to other parts of the human body.

The indiscriminate and injudicious use of so powerful a remedy as pituitrin in obstetrical work should be discouraged and condemned, as it is an agent fraught with serious dangers to both mother and baby when given as a time saver, in proper dosage, at the wrong times, or when its administration is contraindicated absolutely by the existence of mechanical barriers to natural delivery. The unintelligent use of pituitrin has unquestionably contributed more than its mite of share to the sum total of ruptured pelvic floors and asphyxiated infants.

An important consideration in obstetrical work is the necessity of prompt primary repair of the perineum, whenever it is possible (as it usually is) and if not practical then the proper secondary repair at the earliest feasible time, thereby promoting the future marital welfare of the family, through the conducive effects of contentment, happiness and harmony.

In the use of clinical thermometers the importance of the employment of some suitable means of disinfection of the same is obvious, as the unsterilized thermometer may very readily become the means of transmitting various forms of infectious organisms and may act as a potential carriers of numerous pathogenic bacteria, such as the bacilli of tuberculosis, diphtheria, influenza, and typhoid; the spirochetes of lues and Vincent's angina, etc., and the host of cocci, strepto, staphylo and pneumo, whose normal habitat in so many individuals is in that greatest of all known thermostats, the human mouth. There are a number of satisfactory, moderately priced, disinfecting thermometer containers obtainable nowadays and there is absolutely no excuse for using under any circumstances, a clinical thermometer which has not been kept immersed in a suitable antiseptic solution for a proper length of time to insure at least, adequate

disinfection, if not complete sterilization. If there be a measure of truth in the ancient adage that "cleanliness is next to Godliness" there could be no better opportunity presented for its practical application than in the act of temperature taking. The one minute oral as well as the auxiliary and inguinal methods of temperature taking are so notoriously unreliable and misleading as to merit mention only for the purpose of condemnation, being too antiquated to deserve any favorable consideration whatever.

Relative to that obnoxious practice known as the production of abortions there is but one stand to take, and but one attitude to assume in this mater, and that is the adoption of an absolute, positive and emphatic "*noli me tangere*" policy under any and all circumstances, except in those comparatively rare instances, in which the health of the prospective mother is seriously jeopardized, or her life menacingly threatened by the further continuation of the gestation. This is the one and only contingency arising in these cases which should influence us to resort to the induction of abortion, and there is no other known or acknowledged honest justification for the same, and the distinction between a therapeutic or justifiable abortion performed under these circumstances and an unjustifiable criminal abortion done for the purpose of expediency, gain, profit or other illegitimate object is as great as the difference between day and night.

In the course of our daily work, in our professional relations with one another, and our patients we need no hard set, iron bound, rule of thumb, inflexible, stereotyped set of rules to govern our conduct, but we should be guided, directed, controlled and influenced in our feelings for and attitude towards one another and in all our professional actions, by attempting to follow (even though how feebly at times, when blinded by anger, hatred, envy, jealousy, ill will, fancied affronts, wounded pride or any other of the baser human passions) that greatest of all rules, far greater than any that mere man has ever even dreamed of formulating, and by following the guidance of which no man has ever been known to go astray, "The Golden Rule."

So let us seek no further, for better cannot be found.

THE KAHN TEST

For some time past the Kahn precipitation test for syphilis has been in use and its value in comparison with the Wassermann has been studied. The worth of the Kahn has been so well established that during the past year it has been adopted by the Michigan State Board of Health to supersede the Wassermann. Also, January 1, 1926, the Naval Medical Department selected the Kahn as its standard serologic test for syphilis.

Houghton, Hunter, and Cajigas present an excellent article in the *Journal of the A. M. A.* (December 4, 1926), on the comparative value of the tests as disclosed by 13,971 examinations. This study indicates a remarkably close coincidence of the tests. However, the Kahn, in this series, showed a 21 per cent greater sensitiveness in primary syphilis than did the Wassermann, and in all types a slightly greater sensitiveness.

After reading this article, we are confronted with the possibility that in time the Kahn may supersede the Wassermann as a routine. However, at present, the logical procedure is to use the two tests in conjunction, comparing results for maximum diagnostic accuracy.

These authors present the case of the Kahn exceedingly well and we quote their

SUMMARY:

1. Unlike the procedure of the Wassermann test, which consists of arbitrary steps, the procedure of the Kahn test is based on scientific foundation and is free from such steps.

2. The Kahn test is comparatively simple, direct and rapid, enabling clinicians to obtain Kahn reports from laboratories within several hours after submitting blood specimens, and in emergencies in less than an hour.

3. The Kahn test may be carried out everywhere in the world with the same degree of accuracy, thus rendering available a serum test for syphilis in the tropics and in other parts of the world where the

Wassermann test, as a result of its complexity and use of animals, is either not available or available in a very limited degree.

4. The Kahn test consists of three serum procedures and two spinal fluid procedures capable of giving clinicians far more information in connection with the diagnosis and treatment of syphilis than the Wassermann test.

5. The Kahn test is more sensitive than the Wassermann test in treated cases and in the primary stage of syphilis. The test is somewhat more sensitive than the Wassermann test in other stages of syphilis.

6. The Kahn test has removed the serum diagnosis of syphilis from empiricism and placed it in the relam of quantitative science.—W.E.V.

CASE REPORTS

Hemochromatosis

G. B., age 42, male, married, rather well-nourished, laborer; father died at 80; mother living, 89 years old; no history of brothers or sisters available; heart, lungs and abdominal organs, negative; has grape colored blueness of skin and mucous membranes; urine negative; blood count, normal; Wassermann, 4 plus.

Hemochromatosis is a functional disorder of metabolism characterized by extreme blueness of the skin, the result of an iron reaction or hemosiderin. Sixty-five cases have been reported, 64 of whom were males. Sixty per cent of the cases show sugar in urine or blood but in this case both were negative for sugar.

The liver shows the greatest amount of coloring matter, sometimes as much as 100 times that of normal and this organ is usually greatly enlarged. The pancreas is usually atrophied or undergoes fatty degeneration. The etiological factors are mostly alcohol and syphilis and the treatment is accordingly. This man would not take salvarsan and is taking iodide and mercury treatment. He has gained 16 pounds in three weeks.

I. CLAY HICKS, M. D.
Huntington, W. Va.

Spontaneous Cholecyst-Enterostomy

Cases of this kind are not extremely rare. All of us have seen cases in which on X-ray examination an enlarged, and probably grossly infected gall bladder lies in such close proximity to duodenum or stomach as to cause half circle deformity of the normal contour of these organs. Also we have seen at operation many cases of adhesions between gall bladder and duodenum or gall bladder and stomach. The case to be cited shows the terminal stage of the above findings.

Mrs. M. L., age 65, admitted to the Charleston General Hospital on August 13, 1926, complaining of severe epigastric pain, nausea, vomiting, chills; had had similar attacks at intervals of about two months during the past year; jaundiced past ten days. Examination showed marked tenderness to pressure over gall bladder region with upper abdominal muscle spasm and rigidity. Temperature on admission 105, pulse rate 120, leucocyte count 25,000 with 95 per cent polynuclears. Diagnosis:—Cholecystitis acute, with stones. Shortly after admission, and while the necessary laboratory work was being done, patient experienced a sudden sense of relief, with cessation of pain and relaxation of the upper abdominal muscle spasm and rigidity. Thirty minutes later patient had a copious bowel movement containing seven gall stones, and during the next twelve hours she passed twenty-one gall stones, the largest being about the size of an English walnut—many very small stones probably being lost. Sixteen hours after admission temperature and pulse rate were normal, and there was no variance from the normal during the next four days, at the end of which time the patient left the hospital apparently well.

I do not attempt to predict the eventual outcome in this case. The patient had had repeated attacks of acute cholecystitis, handled by nature, and finally apparently cured by nature, during the attack for which she had sought surgical intervention, by the production of spontaneous cholecyst-enterostomy.

BANKHEAD BANKS
Charleston, W. Va.

THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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EDITORIAL

AND NOW FOR 1927!

We hope you have had a delightful and merry Christmas. We hope you have fully enjoyed the festivities of the holiday season, renewed old friendships, played Santa Claus for the children and that you have lived anew the old days when, like them, you knew less but were just as happy.

We wish you a prosperous New Year in which you will forget the hardships and disappointments of the past.

And now, for 1927! Let's all get started right. The state association has gone through one of the most hectic years in its more than a half century of existence, but it has arrived with colors flying. The membership report elsewhere will show a substantial increase over 1925—and 1927 will show a substantial increase over 1926 because *there is a reawakening of interest in association affairs.* Elsewhere in this Journal you will find an article by Dr. Bigelow which sounds the alarm. It behooves every practitioner of medicine to read it. We *must* have concerted action to protect our interests, we *must* pull together or the time will come when you will be drawing a stipend from the state just like any white collar clerk, for the privilege of following your chosen profession.

Let every member renew his allegiance now by paying his dues promptly, resolving to attend his society meetings and contribute his part to all activities. If these things are done, the sixtieth annual anniversary year will go down into history as a year of pride and glory for the association, your JOURNAL and the entire profession of West Virginia.—*The Publication Committee.*

WARNING

Within the last four weeks THE JOURNAL received from an unidentified source in Atlanta, Ga., an advertisement relating that "fine Florida oranges" were being offered for sale at "$3 a box of three hundred." Explicit instructions were given—all about how the advertisement was to be printed, the size of space, the kind of type and how THE JOURNAL should send its statements for payment of the account.

Since the time the original communication was received, we have viewed one or two medical publications in which this bargain offer of "fine Florida oranges"—please spell out the Florida—was contained. It did not appear in THE WEST VIRGINIA MEDICAL JOURNAL because it is, and always has been, the policy of this publication to verify all advertisements before they are scheduled to appear in the advertising section.

National advertisers must conform to the standards of the bureau of chemistry and pharmacy of the American Medical association. That is for the protection of our members. When the so-called local advertising is submitted, the standing of the company proposing to advertise and its ability to back up its claims are verified. Thus, not only the members but our adveretisers are protected.

What if the December JOURNAL had carried a display advertisement of the so-called Acme Farms, Gainsville, Fla., offering our members these fine oranges at such a low cost, sent express prepaid? It is impossible to estimate the amount of money that would have flowed into the hands of the gang of mail order "con" men before federal postal inspectors got onto the job. However, some time after the December JOURNAL was mailed, without the advertisement, the Associated Press carried a news story of an investigation which had been started and it said that inspectors estimated the total amount of money that had flowed into the south to be more than $30,000. It indicated that the operators of the fraud scheme were insane.

The ad did not appear in your JOURNAL. Every effort will be extended in the future, also, to protect the membership from fraudulent advertising. This is a part of the service to members, and all are urged, when in doubt, to inquire of the executive secretary

as to the standing of any concern offering its wares via the mail order route. The safe method, however, is to patronize JOURNAL advertisers FIRST!

LAW ENFORCEMENT

An announcement that should be looked upon with much interest by each member of the medical profession in West Virginia was made recently by Dr. W. T. Henshaw, state health commissioner, when he said:

> "If the legislature will give me an additional appropriation of about five thousand dollars I will put an agent of this department in the field, clothed with full police authority, for the sole purpose of investigating and prosecuting violators of the Medical Practice and kindred acts."

He points out that a legislative appropriation will be necessary before he can go ahead and since the legislature is to convene within a few days, it is expected that some definite step will be taken to bring his recommendation before them.

Since the state department of health was created there has never been a field representative and yet this is probably the most important department of all the state branches of government. Prosecutions have been local affairs with local doctors or health commissioners appearing before the grand juries. Other departments have been well represented in the field; there have been the game wardens; mine inspectors who called upon the carpet those who would needlessly endanger the lives of the miners; factory inspectors; "blue sky" law operatives and others in numbers—but never has there been "an official representative from Charleston" whose duties were to protect the health of the citizenry through the prosecution of those quacks and irregulars who thrive because of lenient local politicians.

Then, too, the state department of health has been handicapped because of lack of funds. It probably is the poorest of all the major departments.

There has been one complaint in West Virginia, to view the other side of the picture, that must be considered. It is that there are too many enforcement officers in the state, already. It has been charged that the state is so over-run with them that the traffic officers are an absolute necessity. The cities have their patrolmen, traffic men, plain-clothes detectives; the counties have their constables, special constables, deputy sheriffs and sheriffs; the state has its game wardens, deputy fire marshals, prohibition agents, state constabulary, special prohibition agents operating under fee bases, "blue sky" law operatives; the federal government has its marshals, deputy marshals, federal prohibition agents, department of justice operatives, narcotic law inspectors, postal inspectors—all of these operating in West Virginia. It may be we have overlooked some, too.

But in reply it might be said that one more field representative of a state department, especially when he represents so important a service, can add only an infinitesimal amount to the burden of law enforcement. He should be added even if the legislature finds it necessary to eliminate some of the "dead timber" to make room for him.

The health commissioner's idea is to get a competent young lawyer, put him to work on the cases of irregularity now known to the department and have him represent the state in the prosecution of these. Also, he would conduct future investigations. This would take this load off the shoulders of the local prosecutors, relieve them of what they might find to be unpleasant tasks. The state prosecutor would be responsible.

It is believed that after a time he would find his duties light but right now there is plenty of work for him to do.—C. A. R.

REPORTS FROM COMPONENT SOCIETIES

Greenbrier Valley

Officers of the Greenbrier Valley Medical society were reelected at a meeting December 7. They are: D. G. Preston, Lewisburg, president; J. D. Arbuckle, Maxwellton, vice president; C. F. Mahood, Alderson, secretary-treasurer. Delegates to the sixtieth annual meeting to be held June 21-23 in White Sulphur Springs are Secretary Mahood and H. L. Goodman of Ronceverte. The society closed the year with virtually a 100 percent membership, new members added replacing those who dropped out.

Greenbrier also is preparing for the new year with enthusiasm, this society already having reported virtually one-half of its members paid up and is the first society to report, as in the past two years.

Fayette

The Fayette County Medical society had its final meeting of 1926 at Montgomery. Approximately 60 attended. The scientific program was taken up with a symposium on the heart, arranged by Dr. Milton C. Borman of Montgomery. Papers were read by Doctors Oscar B. Biern of Huntington; George H. Barksdale of Charleston; and A. H. Grigg of Beckley. Charleston doctors attended, including E. Bennette Henson, A. A. Shawkey, C. L. Lyon and C. H. Hansford, and took active part in the discussion.

H. A. Walkup of Mt. Hope was re-elected president. In a brief address he thanked the society for the spirit of cooperation in the past year and especially extended thanks of the society to all members of the profession who have taken part in Fayette's programs during the year which has been one of the most successful in the society's history. Other officers chosen are A. L. Hunter, Pax, first vice president; A. L. Morris, Jodie, second vice president; G. A. Smith, Montgomery, secretary-treasurer. Censors are William R. Laird of Montgomery, and G. G. Hedges of Mt. Hope.

McDowell

The McDowell County Medical society convened in its regular monthly session in the offices of Welch Hospital No. 1, at 8:45 p. m. December 9, 1926, with President Rutherford presiding. Those present were: Doctors Wetherby, Williams, Killey, Daniels, Wood, Stevens, Woolwine, Shanklin, Peck, Shull, Camper, Davis, Justo, Wilkinson, Rutherford and Anderson. Guests present were: Messrs. Clark, Harmon, Worley, Sharpe, Strike and Farrington. Minutes of the last meeting were approved.

There being no clinical cases for discussion, the regular papers were called for. Upon request Dr. Camper's paper was postponed until the joint session of the society and the Ladies' Auxiliary convening later in the evening.

Dr. Justo gave an excellent review on a number of outstanding cases recently treated in the Welch Hospital No. 1. He laid particular stress upon the virtue of scientific post-operative treatment, making special mention of the use of intravenous injections of solutions of glucose and bicarbonate soda to prevent post-operative acidosis, and to stimulate the functional activities and eliminative organs.

This being the last meeting of the year, the next order of business was the election of officers for 1927, which resulted as follows: president, R. V. Shanklin; vice president, S. A. Daniels; secretary, A. G. Rutherford; treasurer, H. G. Camper; censor, V. M. Wetherby. Delegates to state meeting, R. V. Shanklin and W. B. Stevens; alternates, H. G. Camper and J. C. Killey.

A motion was carried authorizing the incoming president to have the constitution and by-laws revised and reprinted.

The application of Dr. William W. Jenkins being approved by a number of the censors, a ballot was taken and he was unanimously elected to membership. The application of Dr. J. C. Harrison of Dan, was read and referred to the board of censors.

The report of the treasurer was then called for, but the treasurer being absent this report was not given in full. President Rutherford read a statement to the effect that the balance in the treasury, barring outstanding checks, amounted to $541.77.

Motion was then made that the chairman appoint an auditing committee to go over the books of the retiring treasurer and after approval to see that the books were properly turned over to the newly elected treasurer. President Rutherford then appointed the following committee to go in this capacity: Doctors Shanklin, Stevens and Daniels.

President Rutherford then announced that the Ladies' Auxiliary was in session in the parlors of the nurses' home, and that immediately upon adjournment of the business session of the county medical society and the Ladies' Auxiliary, Mrs. Rutherford and himself extended invitations to the members of both organizations to adjourn to the assembly room in the nurses' home and partake of refreshments.—J. H. ANDERSON, M. D.

Harrison

The following officers were elected for 1927 at the annual meeting of the Harrison County Medical society December 2: President, Cecil O. Post, Clarksburg; vice president, A. J. Kemper, Lost Creek; secretary, B. Steele Brake, Clarksburg; treasurer, E. A. Teets, Clarksburg. Delegates to the sixtieth annual meeting of the state association are Doctors Brake, A. T. Post, J. F. Williams and Cecil O. Post, all of Clarksburg. Dr. William Gaston was elected censor for a three-year term.

Raleigh County

Officers for 1927 electeed by the Raleigh County Medical society at a meeting December 16 are as follows: President, T. F. Garrett, Sprague; first vice president, D. L. Hill, Wickman; second vice president, D. B. Jarrell, Beckley; secretary-treasurer, E. S. Dupuy, Beckley. Delegates to annual meeting, Walter D. Simmons, Slab Fork; A. U. Tieche, Beckley; K. M. Jarrell, Beckley; alternates, J. E. McKenzie, Beckley; D. L. Hill, Wickman; E. H. Hedrick, Beckley.

Kanawha

The first meeting in December featured an address by Dr. John Thames, full-time health officer of Kanawha county. He spoke on Immunization, a timely subject and most excellently prepared. Dr. Ireland reported on work done by the public policy committee and urged members to do personal work along these lines to secure proper legislation.

The annual election of officers resulted as follows: President, Dr. R. H. Dunn, South Charleston; first vice president, Dr. T. M. Barber, Charleston; second vice president, Dr. D. N. Barber, Owens; secretary-treasurer, Dr. H. B. Robins, Charleston. Delegates to 1927 state convention—Dr. W. A. McMillan, Dr. John R. Shultz, Dr. John Thames, Dr. Ray Kessel, Dr. Wm. Thornhill, Dr. G. H. Barksdale, all of Charleston. Censor, Dr. R. A. Ireland, Charleston.

In the second December meeting Dr. G. C. Schoolfield of Charleston drew an unusually large audience. His reminiscences of "Practice and Practitioners" in Charleston and environs over the last 35 years were most interesting. A buffet lunch was served. The name and application of Dr. R. R. Stuart of Charleston was presented for membership.—T. M. BARBER.

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker Medical society met November 23 in Hotel Tygart, Elkins. Those present included Doctors A. M. Fredlock, W. G. Harper, T. M. Wilson, C. H. Hall, S. G. Moore, A. P. Butt, E. R. McIntosh, B. I. Golden, E. M. Hamilton, A. S. Bosworth, W. S. Michael and J. C. Irons; visitors, Dr. Howard T. Phillips of Wheeling, and Doctors Parmisano, Simon and Baker, D. D. S., F. S. Johnston, pharmacist, and Dr. Richkenbery, pathologist and bacteriologist at Davis Memorial hospital.

At a supper preceding the program Dr. Fredlock presided in the absence of the president and the following officers were chosen: E. M. Hamilton, Belington, president; T. M. Wilson, Elkins, first vice president; J. L. Miller, Thomas, second vice president; J. C. Irons, Dartmoor, re-elected secretary-treasurer. Dr. O. L. Perry was re-elected censor for Randolph county.

The secretary read a paper prepared by Dr. Blanche Miller of Eglon, on Gas Gangrene and the society extended Dr. Miller a vote of thanks for it. The society then heard Dr. Phillips' lecture on "The Common Skin Diseases," which was illustrated.

A committee of three composed of Doctors Wilson, Bosworth and Talbott was appointed to arrange, if possible, for the publication of the series of educational advertisements prepared by the executive secretary of the state association. The society also voted to invite Judge Waugh to deliver an address on the medico-legal responsibilities and duties of physicians.

NOTES

Dr. C. A. Groomes, formerly president of the society, has returned to Bay City, Mich.

Dr. Moses Paulson did not accept the position as bacteriologist and pathologist at Davis Memorial hospital, as reported in the October JOURNAL. He is specializing in diseases of the rectum in Baltimore and is connected with Johns Hopkins hospital, according to information received.

Dr. W. G. Harper has located in Elkins, occupying the offices formerly used by Dr. P. L. Gray who has moved to Parkersburg. Dr. Harper formerly resided in Beverly.

Dr. Richard Talbott, son of Dr. and Mrs. L. W. Talbott of Elkins, and Miss Thelma Butt, only daughter of Dr. and Mrs. A. P. Butt, were married in October and now are residing in Hinton.

Dr. J. F. Trahern of Belington, one of the oldest physicians in our section, a veteran of the war between states, is seriously ill, having suffered a paralytic stroke affecting his right side.

J. C. IRONS, *Secretary.*

Marion

L. N. Yost of Fairmont was elected president of the Marion County Medical society at the annual meeting in December. G. R. Miller of Fairview first vice president and C. J. Carter of Fairmont secretary. C. W. Waddell of Fairmont was re-elected treasurer. Delegates to the sixtieth annual meeting are W. F. Boyers, E. P. Smith and J. M. Trach, all of Fairmont; alternates, J. A. Reidy of Monongah, L. D. Norris and L. N. Yost, Fairmont.

Cabell

The following officers were elected at the annual meeting of the Cabell Medical society Dceember 23: F. C. Hodges, Huntington, president; J. W. Rife, Kenova, vice president; C. G. Willis, Huntington, and R. M. Bobbitt, Huntington, both re-elected secretary and treasurer, respectively. Delegates to the next annual meeting are J. C. Matthews, F. O. Marple, W. W. Strange and Oscar B. Biern, all of Huntington; alternates, R. M. Sloan, G. D. Johnson, W. C. Swann and C. P. S. Ford, all of Huntington.

GOITER ASSOCIATION MEETING IS CALLED

The American Association for the Study of Goiter will hold its annual clinical meeting in Philadelphia January 31 and February 1. The program has been arranged by Emil Goetsch of Brooklyn, president; and Kerwin Kinard of Kansas City, the secretary. Clinics will be conducted each forenoon in the University of Pennsylvania hospital, scientific sessions will be held each afternoon in the Bellevue-Stratford hotel and members of the state medical association are invited. Among those on the program are Crotti of Columbus; Fahrni of Winnipeg; Tiffin of Seattle; Shivers of Colorado Springs; Gillette of Toledo; Dorsey of Keokuk, Ia., and Krall of Kansas City.

STATE AND GENERAL NEWS NOTES

CHESTER R. OGDEN OF CLARKSBURG, IS ASSOCIATION'S SIXTIETH PRESIDENT

DR. OGDEN was born at Sardis, Harrison County, November 9, 1873. His father, Robert S. Ogden, conducted a general store at that place for more than forty years, and during most of that time was also postmaster, having received his appointment from Abraham Lincoln. His grandfather was Dr. William R. Ogden, one of the early physicians of that community. Dr. Ogden's mother was Jane Rittenhouse, whose father was an extensive land owner and farmer prior to the Civil War. The branch of the Ogden family to which Dr. Ogden belongs was of the house of John Ogden, the first governor of New Jersey, being appointed by King James of England.

CHESTER R. OGDEN, M. D.

Fellow of the American College of Surgeons and one of the most widely known men in West Virginia medicine, takes over the helm of the state association on January 1 as the sixtieth president. His home is in Clarksburg and he has been active in association activities for more than a score of years.

Dr. Ogden's early ancestors in America were all Quakers — the Shinns, the Rittenhouses and the Ogdens were members of Penn's colony in Philadelphia.

Dr. Ogden attended the public schools of Sardis and clerked in his father's store till the age of 18, when he entered Salem College, at Salem, W. Va., in March, 1892. He completed the course for teachers in the spring of 1894. In 1894 he was elected superintendent and principal of the Salem public schools, which position he held for three years, resigning in 1897 to begin the study of medicine. During the three years he was superintendent he continued advanced studies at Salem College by special arrangement, and in June, 1897, graduated with his class, receiving the degree of Bachelor of Science. In September, 1897, he entered the University of West Virginia and took the preliminary course given in medicine in the university at that time. In the fall of 1898 he began the active study of medicine at the Hospital College of Medicine (now University of Louisville) from which institution he received his medical degree in 1902. Dr. Ogden took the examination in West Virginia for qualification to practice medicine in April, 1901, but did not begin practicing his profession till after graduation in 1902.

Dr. Ogden was married in August, 1902, to Edna E. Louchery, daughter of Dr. D. C. Louchery of Clarksburg. Two daughters have been born, the Misses Mary and Virginia Ogden.

Since October 1, 1902, Dr. Ogden has been actively engaged in the practice of his profession in Clarksburg. For the last ten years he has been giving his attention largely to surgery, consultations and office practice. He was made a member and elected secretary of the Harrison County society in 1903. He has been a delegate from his county society to the state association a

number of times, and the minutes of the Harrison County society show that he has been present at more meetings of his society since he has been a member than any physician in Harrison county.

Since his admission into the state medical association, he has attended twenty of the annual meetings, being absent from only three, and then because of illness in his family. He has always taken an active part in the meetings and deliberations of the state medical association, contributing a number of papers to the annual programs, as well as frequent discussions and addresses, a number of which have appeared in THE JOURNAL. He was twice chosen to make the reply on behalf of the association to the annual address of welcome, has spoken at several banquets, has been secretary and chairman of the sections on surgery, was the delegate to the American Medical Association from 1915 to 1920, twice being appointed by the Speake of the House Work, on important committees. He was elected Councillor of the third district in 1912, which position he has continuously held until his elevation to the presidency. He delivered the oration on surgery at the last annual meeting at Morgantown.

Among his contributions to THE JOURNAL and papers at the annual meetings, have been the following: "The Importance of the Early Diagnosis of Diphtheria"; "The Uterine Curette—Its Use and Abuse;" "The Meaning of Conservatism in Medicine and Surgery;" "Abdominal and Pelvic Drainage;" "Appendicitis Complicating Pregnancy;" "Cholecystectomy vs. Cholecystostomy;" "Rupture of the Uterus;" "Preoperative and Post-operative Care of Cases in Abdominal and Pelvic Surgery;" "The Drama of Surgery in West Virginia." He also has delivered a number of addresses by invitation before scientific and business organizations throughout the state.

Besides being a member of the American Medical association, he is also a member of the Southern Medical association, the Mississippi Valley Medical Association, Interstate Post-Graduate Assembly of North America and the Clinical Congress of Surgeons of North America. He attends most of these meetings every year, and has, since beginning his practice, attended 18 annual meetings of the American Medical association. Dr. Ogden has taken a number of postgraduate courses of study, and attended numerous clinics of America's leading physicians and surgeons. He visited several European clinics in 1913 and was in attendance at the international congress in London.

In 1914 he was honored by the American College of Surgeons in being made a Fellow of the College and during the past year was chairman of the West Virginia committee of the college. He has been a member of the surgical staff of St. Mary's hospital, Clarksburg, W. Va., since the organization of that hospital, is senior active local surgeon for the B. & O. railroad and surgeon for several local industrial institutions. He is a member of a number of fraternal organizations; in religion, a Baptist, and in politics, an Independent Democrat.

Dr. Ogden is a self-made man and by his indomitable spirit of progress has obtained an enviable position among the fellows of his profession. It is predicted that the same spirit will have placed the West Virginia Medical association on a higher plane than in former years when 1927 comes to a close.—C. A. R.

NEW SANATORIUM FOR TUBERCULOUS SOUGHT

Agitation for a new sanatorium for tuberculosis patients, to be located in southern West Virginia, has been started by the Raleigh County Medical society. In letters to all of the medical societies in the southern tier of counties, a committee of the Raleigh society consisting of Doctors Robert Wriston, E. S. Dupuy and Kyle M. Jarrell, urges the physicians to interest themselves in this project and to assist in stimulating public opinion in favor of the proposition.

The letter in part, reads:

"Knowing the need for a tuberculosis sanatorium for southern West Virginia, we are interesting ourselves in asking the several societies in southern West Virginia to take the matter up with their respective legisla-

tors and make an effort to get an appropriation for such an institution. We have no choice of location, just so a sanatorium is located in a suitable place in the southern part of the state, we will be content.

"We hope the societies will get active at once, appoint committees who will get busy and see if we cannot get something done along this line. Most certainly, the people of southern West Virginia should have an institution of this kind and we urge united effort be put forward to put it over."

This movement was to come before the state association's committee on public policy and legislation at its meeting December 29 and the decision of the state committee likely will be announced in the February JOURNAL.

FOUR PROMINENT MEN ON TRI-STATE PROGRAM

Four of the most prominent physicians in the United States will appear on the program for the next meeting of the Central Tri-State Medical society in Huntington January 13. The program, just announced by Dr. F. O. Marple, Huntington, secretary, is as follows:

"The Place of the Blood Count in Diagnosis"—Dr. O. H. Perry Pepper of Philadelphia.

"Cancer of the Large Bowel"—Dr. Charles H. Mayo, Rochester, Minn.

"Fiction and Facts About the Treatment of Peptic Ulcer of the Stomach and Duodenum"—Dr. Murat Willis of Richmond, Va.

Dr. Franklin H. Martin of Chicago, director-general of the American College of Surgeons, also expects to be present and probably will talk on some subject of his own choosing.

Indications are that more than 500 members of the profession from West Virginia, Ohio and Kentucky will attend this meeting. Dr. Marple will be in charge of the registration booth and every physician is urged to see that his name is enrolled.

SEEKS LOCATION

A letter relating that the writer is seeking a location in West Virginia as an assistant or associate surgeon has been forwarded to the executive secretary. It relates that the writer, now in Montreal, is a graduate of McGill in science and medicine; has had four years of post-graduate training in diagnosis and surgery, including the residency at Montreal Western hospital, the assistant residency in surgery under Dr. J. C. Bloodgood in Baltimore and a surgical fellowship at the Mayo clinic. For further information write the executive secretary, Box 1541, Charleston.

RELIEF MEN AVAILABLE

During the last month a number of relief men have signed the register in the executive secretary's office and likely are available at this time. If in need of a relief man, a letter addressed to the executive secretary, Box 1541, Charleston, will bring an immediate reply.

SCIENTIFIC EXHIBIT OF A. M. A.

Arrangements now are being made for the scientific exhibit for the Washington, D. C., session of the American Medical Association, May 16-20. It will be located in the Washington auditorium in which also will be housed the registration bureau, technical exhibits and motion picture theatre. Exhibits will be presented in a way to stress their scientific value. If West Virginians desire to exhibit or reserve time in the motion picture theatre, they should communicate immediately with Paul Nicholas Leech, director, 535 North Dearborn street, Chicago.

COLLEGE OF SURGEONS

The sectional meeting of the American College of Surgeons for West Virginia, Virginia, Maryland and the District of Columbia will be held in Washington, D. C., January 17 and 18.

MEMBERSHIP ROLL FOR PAST YEAR SHOWS FINE INCREASE OVER 1925

Showing an increase of 40 members, the state association has rounded out one of its most successful years. And in accordance with instructions from the council two years ago, the membership roster is published in this issue. Every effort has been made to keep it accurate. It has been checked and rechecked but there is a possibility that errors have crept in. If such are noted, the executive secretary will appreciate a correction.

In 1925, the first year for the higher rate of dues, the membership report showed 1,009 names. At the close of this year, there are 1,049 paid up members, virtually every society has new applications for membership pending, one society already has virtually one-half of its members in good standing and every indication points to a prosperous 1927.

The outgoing year has been one of widespread activity for the association. The educational publicity campaign has brought results and the press has co-operated where and when possible. The fifty-ninth annual meeting at Morgantown drew probably the largest registration in history and it also was marked by the first real meeting of the woman's auxiliary, a growing organization.

While the automotive insurance plan has not been taken up as thoroughly as it was hoped, this probably has been due to the fact that many members' policies were renewed before the real value in money savings under the association's plan was understood.

Everything considered, President Bloss is delivering a wide-awake and active medical organization to Incoming President Ogden for his guidance in the new year. The service department in the executive secretary's office, an innovation that is not stressed to such a degree in any other state organization is becoming more efficient. All of the secretaries of the component societies are cooperating in wonderful fashion. And so, the officers and councillors are facing 1927 with much enthusiasm and optimism. It is to be a legislative year and while the program has not been fully drafted for publication at this time, all officers of component societies and the membership at large are urged to be in readiness to carry on the work back home when the call is issued.

It so happens that during the new year the chairman of the council, the chairman of of public policy and legislation, professional relation, workmen's compensation and medical education committees all are Charleston members of the profession. This is expected to work for the welfare of the membership and the efficient management of all association affairs.

Herewith the membership roster for 1926.

DECEASED

Samuel Hunter Austin, Lewisburg
Luther Haymond, Clarksburg
T. C. McClung, Rupert
John Morris McConihay, Charleston
Amos McCandless Reid, Charleston
C. C. Rusmisel, Gassaway
P. C. Showalter, Clarksburg

HONORARY MEMBERS

Gregory Ackerman, Wheeling.
A. B. Barnett, Wheeling.
J. W. Bosworth, Philipi.
E. S. Buffington, Huntington.
T. M. Calvert, Mannington.
Irwin C. Carlisle, Charleston.
A. H. Carr, New Hope.
H. P. Linsz, Wheeling.
M. A. Dowler, Glendale.
A. N. Frame, Parkersburg.
A. S. Grimm, St. Marys.
T. M. Hood, Clarksburg.
P. H. Killey, Vivian.
J. M. McConihay (D), Charleston.
J. W. Rickey, Moundsville.
J. Schwinn, Wheeling.
S. S. Staunton, Charleston.
W. C. Kelly, Morgantown.
G. R. Davis, Charleston.
B. F. Harden, Wellsburg.
B. B. Ransom, Harpers Ferry .
P. H. Swann, Huntington.
D. C. Louchery, Clarksburg.
F. W. Fawcett, Ronceverte.

Barbour-Randolph-Tucker

Bolton, H. H., Pierce.
Bosworth, A. S., Elkins.
Bosworth, J. L., Mill Creek.

Bosworth, Perry, Huttonsville.
Butt, A. P., Elkins.
Crittenden, T. B., Dodson, Md.
Cromwell, Guy N., Davis.
Dove, William R., Harman.
Dunham, R. W., Elkins.
Few, S. D., Parsons.
Fredlock, A. M., Elkins.
Golden, Ben I., Elkins.
Golden, W. W., Elkins.
Granger, G. A., Coketon.
Gray, P. L., Parkersburg.
Groomes, C. A., Elkins.
Hall, C. H., Elkins.
Hamilton, E. M., Belington.
Irons, J. C., Dartmoor.
Michaels, W. S., Norton.
Miller, J. L., Thomas.
Moore, S. G., Elkins.
McIntosh, E. R., Elkins.
Owens, H. K., Elkins.
Perry, O. L., Elkins.
Rohrbaugh, C. L., Belington.
Stroud, C. G., Brownton.
Teter, J. M., Box 121, Century.
Updike, E. H., Millcreek.
Williams, C. B., Philippi.
Wilson, T. M., Elkins.

Brooke

Abersold, G. W., Short Creek.
Arnold, J. R., Belleville.
Bernstein, L. J., Wellsburg.
Booher, W. T., Wellsburg.
Focer, R. L., Colliers.
Harden, B. F., Wellsburg.
Matson, F. L., Wellsburg.
McCullough, J. S., Follansbee.
McMullen, J. P., Wellsburg.
Nolte, H. A., Beech Bottom.
Schultz, J C., Wellsburg.

Cabell

Adkins, Asa W., Wolf Pit, Ky.
Baber, James, H., Huntington.
Beckner, W. F., Huntington.
Biern, Oscar B., Huntington.
Bloss, J. R., Huntington.
Bobbitt, R. M., Huntington.
Brammer, F. E., Huntington.
Brandebury, H. A., Huntington.
Brown, B. F., Huntington.
Bruns, W. F., Ceredo.
Buckner, C. M., Huntington.
Cronin, D. J., Huntington.
Farnsworth, F. F., Milton.
Ferguson, J. W., Kenova.
Ferguson, S. J., Verdunville.
Ford, C. P. S., Huntington.
Ford, J. C., Huntington.
Garrett, B. D., Kenova.
Gerlach, E. B., Huntington.
Gibson, A. P., Huntington.
Goff, T. N., Kenova.
Guthrie, J. A., Huntington.
Guthrie, L. V., Huntington.
Hardwick, R., Huntington.
Hatfield, H. D., Huntington.
Hawes, C. M., Hunitngton.
Hereford, W. D., Huntington.
Hicks, I. C., Huntington.
Hines, O. T., Huntington.
Hirschman, I. C., Huntington.
Hodges, F. C., Huntington
Hoitash, F. J,, Huntington.
Howard, G. L., Huntington.
Hubbard, J. E., Huntington.
Hume, B. L., Huntington.
Hunter, W. Byrd., Huntington.
Johnson, G. D., Huntington.
Jones, Arthur S., Huntington.
Kappes, W. C., Huntington.
Keesee, J. R., Huntington.
Keiser, N. W., Huntington.
Kessler, A. D., Huntington.
Klump, J. S., Huntington.
Latham, C. A., Huntington.
Lewis, W. M., Huntington.
Lusher, H. V., Huntington.
Lyons, Geo. M., Huntington.
Mackenzie, A. R., Huntington.
Malcom, C. H., Huntington.
Marple, F. O., Huntington.
Martin, H. B., Huntington.
Mathews, J. C., Huntington.
McConkey, S. A., Barboursville.
*McCutcheon, Randolph, Hunt'gton
Miller, E. N., Huntington.
Moore, M. B., Huntington.
Moore, T. W., Huntington.
Morrison, Lon C., Milton.
Musgrave, D. E., Barboursville.
Mynes, L. H., Huntington.
Neal, W. E., Huntington.
Pickering, A. J., Huntington.
Poliakoff, Nathan, Huntington.
Prichard, K. C., Huntington.
Rader, J. E., Huntington.
Rife, J. W., Kenova.
Rowey, W. N., Huntington.
Ruedemann, Rudolph, Jr., H'nt'g'n.
Schuller, F. X., Huntington.
Shirley, R. V., Ceredo.
Sloan, R. M., Huntington.
Spencer, W. R., Barboursville.
Steenbergen, J. H., Huntington.
Stewart, W. D., Huntington.
Strange, W. W., Huntington.
Swann, W. C., Huntington.
Taylor, C. T., Huntington.
Taylor, I. W., Huntington.
Thomas, W. C., Huntington.
†Van Meter, R. S., Huntington.
Vest, Walter E., Huntington.
Vickers, R. E., Huntington.
Vinson, L. T., Huntington.
Walker, S. P., Huntington.
Warnock, C. W., Huntington.
Watts, A. J., Huntington.
Willis, C. G., Huntington.
Wilkinson, R. J., Huntington.
Wylie, R. M., Huntington.
York, A. B., Huntington.
Deer, Walter H., Pittsburgh.

Doddridge

Freeman, Homer, Center Point.
McGovern, A. M., West Union.
Poole, A., West Union.
Wetzel, E. T., West Union.

Eastern Panhandle

Albin, A. O., Charles Town.
Bitner, E. H., Martinsburg.
Duff, James A., Martinsburg.
Eagle, A. B., Martinsburg.
Evers, Florence B., Martinsburg.
Fry, David P., Hedgesville.
Glover, Victor, Martinsburg.
Haines, B. F., Charles Town.
Henshaw, W. T., Charleston.
Johnson, C. C., Bolivar.
McSherry, J. W., Martinsburg.
Morison, G. P., Martinsburg.
Oates, T. K., Martinsburg.
Phillips, F. M., Charles Town.
Porterfield, M. H., Martinsburg.
Sperow, Clifford, Martinsburg.
Sponceller, G. J. E., Martinsburg.
Tonkin, H. G., Martinsburg.
Wallace, W. A., Martinsburg.

Fayette

Adair, Templeton, Mt. Hope.
Bays, A. E., Boomer.
Bilger, F. W., Maybeury.
Brown, C. M., Forest Hill.
Brown, J. C., Nallen.
Bruce, W. E., Beard's Fork.
Brugh, B. F., Montgomery.
Caldwell, M. E., Montgomery.
Crank, L. A., Lawton. ,
Daugherty, T. B., Kaymoor
Frazier, Claude, Powellton
Goodman, H L., Ronceverte.
Groome, F. W., Elverton.
Grose, E. J., Fayetteville.
Hamner, J. E., Quinwood.
Harless, L. R., Glen Ferris.
Haynes, W. N., Victor.
Henderson, O. J., Montgomery.
Hodges, G. G., Kilsythe.
Hogg, Gory, Harvey.
Hogshead, Ralph., Carbondale.
Hopkins, J. W., Fayetteville.
Hughart, J. E., Landisburg.
Hunter, A. L. Pax.
Jones, E. E., Mt. Hope.
Laird, W. R., Montgomery.
Lee, R. L., Harvey.
Lemon, C. W., Claremont.
Martin, H. C., Clover Lick.
Moore, M. A., Kingston.
Morris, A. L., Jodie.
McIntosh, W. P., Longacre.
Peck, R. S., Cannelton.
Price, S. W., Scarbro.
Puckett, F. B., Oak Hill.
Shaffer, J. S., Montgomery.
Shirkey, D. W., Montgomery.
Skaggs, H. C., Montgomery.
Skaggs, G. W., Beards Fork.
Smith, G. A., Montgomery.
Smith, W. E., Minden.
Spinks, J. M., Mt. Hope.
Van Pelt, J. F., Oak Hill.
Walker, E. E., Scarbro.
Walker, J. W., Winona.
Walkup. H. A., Mt. Hope.
Woodville, J. B., Lansing.

Grant-Hampshire-Hardy-Mineral

Abbott, J. G., Piedmont.
Babb, W. M., Keyser.
Baker, F. L., Burlington.
Brooks, O. V., Moorefield.
Coffmann, H. F., Keyser.
Dailey, R. W. Jr., Romney.
Drinkwater, W. G., Gormania.
Dyer, V. L., Petersburg.
Easton, J. F., Romney.
Giffen, T. C., Keyser.
Gochenour, G. S., Moorefield.
Grove, J. B., Petersburg.
Highberger, W. T., Maysville.
Hoffman, C. S., (D.) Keyser.
Johnson, S. B., Franklin.
Kalbaugh, Z. T., Piedmont.
Lantz, J. O., Hartmansville.
Love, R. W., Moorefield.
Martin, E. B., Romney.
Maxwell, M. H., Keyser.
Moomau, Glenn, Petersburg.
Moore, C. L., Upper Tract.
Moyers, B. F., Matthias.

Moyers, J. A,, Franklin.
Offutt, J. S., Capon Bridge.
Scherr, A. A., Keyser.
Strachan, Hugh, Blaine.
Wilson, E. K., Romney.
Wilson, T. L., Piedmont.
Wolverton, J. H., Piedmont.
Wright, M. F., Burlington.

Greenbrier Valley

Arbuckle, J. D., Lewisburg.
Argabright, O. P., Alderson.
Beard, H. L., Lewisburg.
Burner, A. E., Durbin.
Campbell, C. R., Williamsburg.
Compton, J. W., Ronceverte.
De Vebre, J. W., Ronceverte.
Gunning, H. D., Rainelle.
Hannah, U. H., Cass.
Hogue, H. W., White Sulphur Spgs
Kessler, E. E., Sanford, Fla.
Jackson, J. A., Ronceverte.
Love, S. G., Ronceverte.
McClung, R. H., Alderson.
McFerrin, S. A., Renick.
Mahood, C. F., Alderson.
Moriarty, J. F., White Sulphur.
Myles, W. E., White Sulphur.
Preston, D. G., Lewisburg.
Price, N. R., Marlinton.
Rupert, L. D., Frankfort.
Wall, C. I., Rainelle.

Hancock

Davis, G. H., Wierton.
Eisner, A. L., Wierton.
Harrington, F. B., Wierton.
Lewis, G. E., Chester.
Moraitis, C., Wierton.
Powers, M. H., Weirton.
Pyle, J. L., Chester.
Richmond, J. E., Weirton.
Rigas, George, Weirton.
Schwartz, L. O., Weirton.
Shafer, C. A., Chester.
Whitaker, L. A., Weirton.

Harrison

Arnett, C. T., Clarksburg.
Bates, C. S., Lumberport.
Brannon, E. H., Bridgeport.
Brake, B. S., Clarksburg.
Brennan, J. T., Clarksburg.
Cather, R. H., Wyatt.
Cherry, S. L., Clarksburg.
Coffendaffer, C. C., Shinnston.
Cole, I. D., Clarksburg.
Corbin, J. E., Clarksburg.
Cruikshank, D. P., Lumberport.
Currence, Louise J., Clarksburg.
Davis, Edw., Salem.
Davis, W. M., Bridgeport.
DeForest, W. C., Clarksburg.
DeForest, C. R., Clarksburg.
Esker, H. H., Clarksburg.
Folk, John, Bridgeport.
Flowers, A. O., Clarksburg.
Flowers Earl N., Clarksburg.
Flowers, E. Newton, Clarksburg.
Gaston, Wm., Clarksburg.
Gocke, W. T., Clarksburg.
Goff, L. C., Clarksburg.
Gribble, O. S., Clarksburg.
Hammer, W. P., Lumberport.
Hannah, Alex, R. F. D., Wilsonburg.
Haynes, H. H., Clarksburg.
Haynes, R. A., Clarksburg.
Hill, E. A., Clarksburg.
Hood, R. C., Clarksburg.
Jackson, Kenna, Wallace.
Jarvis, C. C., Clarksburg.
Kemper, A. J., Lost Creek.
Ladwig, O. W., Wilsonburg.
Langfitt, F. V., Clarksburg.
Leeson, D., Adamston.
Linger, R. B., Lost Creek.
Livesay, J. W., Mt. Clare.
Louchery, D. C., Clarksburg.
Lynch, R. V., Meadowbrook.
Malloy, J. S., Shinnston.
Marsh, W. A., Adamston.
Matheny, B. F., Clarksburg.
McGuire, J. P., Clarksburg.
Nutter, R. B., Enterprise.
Nutter, R. J. Clarksburg.
Ogden, C. R., Clarksburg.
Osborne, R. L., Clarksburg.
Owens, W. T., Clarksburg.
Post, A. T., Clarksburg.
Post, Cecil O., Clarksburg.
Post, S. H., Lost Creek.
Payne, J. B., Washington, D. C.
Page, J. E., Clarksburg.
Payne, Edward, Clarksburg.
Peck, C. R., Clarksburg.
Pendleton, E., Clarksburg.
Riley, R. M., Nutter Fort.
Rosenthal, H. A., Clarksburg.
Selby, V. A., Clarksburg.
Showalter, P. C., (D) Clarksburg.
Shuttleworth, B. F., Clarksburg.
Slater, C. N., Clarksburg.
Sloan, H. E., Clarksburg.
Strother, W. L., Salem.
Teets, E. A., Clarksburg.
Tomason, W. L., Clarksburg.
Tucker, E. D., Nutters Fort.
Underwood, J. H., Clarksburg.
Wehner, E. F., Clarksburg.
Whisler, H. A., Clarksburg.
Williams, J. F., Clarksburg.
Willis, C. A., Charleston.
Wilson, E. A., Salem.
Wilson, J. E., Clarksburg.
Winfield, J. B., Clarksburg.
Wright, Eugene, B., Clarksburg.

Kanawha

Amick, A. L., Charleston.
Anderson, Maury, Dunbar.
Arbuckle, J. A., Charleston.
Aultz, L. L., Charleston.
Aultz, O. L., Charleston.
Ball, Ernest, Charleston.
Banks, Bankhead, Charleston.
Barber, D. N., Owens.
Barber, T. M., Charleston.
Barbour, W. L., Putney.
Barksdale, G. H., Charleston.
Black, W. P., Charleston.
Bobbitt, O. H., Charleston.
Boggs, Andrew S., Charleston.
Brown, C. N. Swandale.
Brown, R. J., St. Albans.
Buford, R. K., Charleston.
Campbell, E. H., Carbon.
Campbell, L. M., Eskdale.
Cannaday, J. E., Charleston.
Capito, G. B., Charleston.
Carson, C. C., Sharples.
Carter, H. L., (D) Sharples.
Casto, T. J., Charleston.
Champe, I. P., Charleston.
Churchman, V. T., Charleston.
Churchman, V. T., Jr., Charleston.
Copeland, C. E., Charleston.
Duff, J. W., Charleston.
Davis, E. A., Charleston.
Dillon, M. L., Charleston.
Dodson, R. M., Charleston.
Dunlap, J. L., Bancroft.
Dunn, R. H., South Charleston.
Ergenbright, R. T., Kam.
Fisher, G. B., Kayford.
Fleger, C. A., Seth.
Ford, R. J., Charleston.
Frame, Ray I., Sharples.
Garred, B. P., Charleston.
Gillespy, Thurman, Charleston.
Glass, H. R., Charleston.
Godbey, M. V., McKendree.
Good, M. D., Charleston.
Gott, Fred, Charleston.
Grisinger, G. F., Charleston.
Hansford, J. H., Pratt.
Hatfield, E. R., Charleston.
Hays, E. R., Chelyan.
Henson, E. B., Charleston.
Holderby, C. E., Sharlow.
Howell, H. H., Danville.
Hunter, J. R., Charleston.
Ireland, R. A., Charleston.
Irwin, G. G., Charleston.
Jarrett, L. A., Dunbar.
Kessel, Ray, Charleston.
Kincaid, H. C., Kam.
Lambert, A. C., Charleston.
Law, H. D., Nitro.
Lewellyn, R. H., Putney.
MacQueen, G. A., Keyser.
Mairs, Atlee, Charleston.
Marshall, C. B., Nitro.
McDonald, T. A., Clendenin.
McMillan, W. A., Charlston.
McPherson, H. D., Sharon.
Mendeloff, M. I., Charleston.
Moore, J. W., Charleston.
Nelson, A. B., East Bank.
Nolen, J. T., Ward.
O'Dell, R. O., South Charleston.
O'Grady, Charles, Charleston.
Ogilvie, H. S., Asheville, N. C.
Pauley, D. F., Jeffrey.
Peterson, M. F., Charleston.
Petty, L. A., Charleston.
Phillips, S. H., Charleston.
Point, W. W., Charleston.
Poling, Owen, Nellis.
Prather, F. G., Barrett.
Preston, B. S., Charleston.
Price, R. B., Charleston.
Putney, James, Charleston.
Raver, C. F., Charleston.
Ray, C. A., Charleston.
Ray, Roy, Clendenin.
Reid, A. M. (D) Charleston.
Rigrish, G. A., Charleston.
Robertson, G. C., Charleston.
Robertson, H. L., Charleston.
Robertson, W. B., Belle.
Robertson, W. S., Charleston.
Robins, Hugh, Charleston.
Rohr, J. U., Charleston.
Roller, R. D., Jr., Charleston.
Schoolfield, G. C., Charleston.
Schunk, Clara, Charleston.
Shawkey, A. A., Charleston.
Shepherd, W. S., Charleston.
Shirkey, W. F., Jr., Charleston.
Shultz, J. R., Charleston.
Skaggs, J. S., Seth.
Skaggs, J. W., Nitro.
Smith, A. A., Ivaton.
Smoot, E. W., Madison.

Staats, H. H., Charleston.
Swint, B. H., Charleston.
Taylor, S. D., Ward.
Taylor, W. E., Mammoth.
‡Thames, John., Charleston.
Thompson, Hugh G., Charleston.
Thornhill, W. A., Charleston.
Vandine, A. C., Charleston.
Walker, R. H., Charleston.
Watts, C. N., Ivaton.
Weltner, F. P., Charleston.
Williams, J. O., Dorothy.
Wilson, Wirt B., Charleston.
Wilson, W. H., St. Albans.
Woodall, R. E., Charleston.
Work, J. A., Blue Creek.

Lewis

Burton, G. M., Weston.
Burton, S. H., Weston.
Carey, H. M., Weston.
Cooper, E. R., Troy.
Cure, M. D., Jr., Weston.
Denham, Cecil C., Weston.
Green, W. H., Weston.
Hall, E. T. W., Weston.
Hudkins, O. L. Weston.
Kessler, D. P., Weston.
King, W. P., Weston.
Lawson, A. F., Weston.
Post, G. R., Weston.
Roop, E. P., New Market, Md.
Snyder, George, Weston.

Logan

Bell, Roy A., Verdunville.
Bardin, Z. M., Lundale.
Davis, C. A., Logan.
Farley, H. H., Logan.
Farley, W. F., Holden.
Gilmer, W. S., Henlawson.
Harless, W. F., Clothier.
Heatherman, K. J., Omar.
Hill, J. O., Logan.
Holcombe, V. E., Logan.
Holderfield, Augustus, Man.
Hunt, B. E., Holden.
Jones, H. C., Logan.
Justice, J. I., Logan.
Lawson, L. W., Logan.
Lawson, S. B., Logan.
Logan E. R., Omar.
Lowery, J. G., Williamson.
Lyons, J. W., Holden.
Martin, G. A., Amherstdale.
May, J. F., Rossmore.
McClellan, W. T., Ethel.
McNabb, J. W., Monaville.
Parker, W. H., Braeholm.
Round, F. L., Holden.
Rowan, W. S., Logan.
Shrewsbury, L. E., Mallory.
Smith, B. D., Omar.
Steele, N. E., Logan.
Steele, L. E., Logan.
Sutphin, Mark, Logan.
Thomas, W. J., Taplin
Thompson, E. B. Ethel.
Thornbury, J. H., Crites.
Vaughn, R. R., Dehue.

Marion

Alkire, J. P., Middleton.
Ballard, J. W., Fairmont.
Barr, J. M., Middleton.
Boyers, L. B., Fairmont.
Boyers, W. F., Fairmont.
Brownfield, G. H., Fairmont.
Carr, Hugh, Fairmont.
Carter, Carl J., Fairmont.
Causey, H. D. Watson, R. F. D.
Clinton, J. B., Fairmont.
Collins, James C., Grant Town.
Conaway, T. J., Barracksville.
Coogle, W. L., Rivesville.
Criss, H. L., Fairmont.
Davis, L. C., Fairmont.
Fitch, D. P., Fairmont.
Fleming, C. S., Fairmont.
Flowers, F. E., Mannington, rfd. 6.
Hamilton, M. F., Mannington.
Henry, C. O., Fairmont.
Holland, O. L., Fairmont.
Horton, L. H., Fairmont.
Howard, E. W., Fairmont.
Howard, L. D., Fairmont.
Jamison, J. A., Fairmont.
Jenkins, J. J., Farmington.
Johnson, H. R., Fairmont.
Keister, H. S., Fairmont.
Kinney, C. L., Ida-May.
Lawson, C. S., R. F. D. Fairmont.
Leahy, W. J., Mannington.
Miller, G. R., Fairview.
Miller, T. H., Fairmont.
Moore, Phoebia G., Mannington.
Morgan, G. V., Fairmont.
Morris, L. D., Fairmont.
Offner, J. E., Fairmont.
Orr, W. W., Mannington.
Parks, C. L., Fairmont.
Peters, A. L., Fairmont.
Prioleau, P. F., Fairmont.
Ramage, C. M., Fairmont.
Riedy, J. A., Monongah.
St. Lawrence, A. J., Fairmont.
Sheppard, E. F., Fairmont.
Smith, A. W., Farmington.
Smith, E. P, Fairmont.
Smith, L. S., Monongah.
Strickler, E. W., Fairmont.
Swisher, K. Y., Fairview.
Trach, J. M., Fairmont.
Traugh, G. H., Fairmont.
Tuckwiller, J. R., Fairmont.
Vance, F. W., Mannington.
Waddell, C. W., Fairmont.
Yost, H. R., Fairmont.
Yost, Joe, Fairmont.
Yost, L. N., Fairmont.

Marshall

Arnold, J. E., Moundsville.
Ashworth, R. A., Moundsville.
Barlow, P. D., McMechen.
Bonar, W. P., Moundsville.
Bone, B. F., Moundsville.
Coffield, A. L., New Martinsville.
Compton, A. F., Moundsville.
Cooper, J. E., Cameron.
Covert, O. F., Moundsville.
Ealy, D. B., Moundsville.
Fortney, Mary J., Hundred.
Fortney, C. S., Hundred.
Hartwig, W. B., Benwood.
Hill, W. G. C., Cameron.
Lake, E. T., Sulphur Springs, Fla.
Luikart, J. H., Moundsville.
Martin, E. E., New Martinsville.
Morgan, C. G., Moundsville.
McCuskey, L. H., Moundsville.
Peck, J. C., Moundsville.
Riggs, C. W., Comeron.
Rinehart, A. B., McMechen.
Ruckmann, J. W., West Liberty.
Skinner, J. M., Memphis, Tenn.
Striebich, J. A., Moundsville.
Theiss, J. O., New Martinsville.
Whisler, H. C., Smithfield.
Wilson, O. P., Moundsville.
Yoho, S. F., Captina.

Mercer

Ballard, C. C., Gap Mills.
Bird, B. W., Princeton.
Bird, J. H., Rock.
Bishop, J. G., Bluefield.
Blaydes, J. F., Bluefield.
Boyd, J. R., Oakvale.
Caldwell, M. B., Matoaka.
Clements, B. S., Matoaka.
Collison, F. J., Bluefield.
Craft, J. H., Springton.
Davis, W. B., Princeton.
Dickerson, W. E., Princeton.
Fitzhugh. W. D., McComas.
Fox, J. F., Bluefield.
Fox, P. R., McComas.
Haggart, H. H., Bluefield.
Hare, O. S., Bluefield.
Harloe, W. W., Matoaka.
Hoge, A. H., Bluefield.
Holroyd, F. F., Glen Rogers.
Holroyd, S. R., Athens.
Horton, E. W., Bluefield.
Kell, S. J., Bluefield.
Kirk, J. B., Bluefield.
Littlejohn, David, Charleston.
Luttrell, H. B., Bramwell.
McElrath, Percy J., Bramwell.
McGuire, John, Bluefield.
Martin, E. E., New Martinsville.
Morris, W. Ross, Alpoca.
Peery, Thos. E., Bluefield.
Porter, H. A., Itman.
Reynolds, C. J., Bluefield.
Rhudy, G. G., Bluefield.
Richmond, F. S., Bluefield.
Ridley, F. T., Bluefield.
Rixie, W. W., Princeton.
Rogers, R. O., Bluefield.
Scott, C. M., Bluefield.
Sinclair, M. W., Bluefield.
Slusher, W. C., Bluefield.
Smith, Carl W., Princeton.
Smith, Ira M., Princeton.
St. Clair, C. T., Bluefield.
St. Clair, W. H., Bluefield.
Steele, B. W., Mullens.
Steele, H. G., Bluefield.
Tanner, E. M., Bluefield.
Thornhill, G. T., Bluefield.
Todd, G. L., Princeton.
Vass, T. E., Bluefield.
Vermillion, J. R., Princeton.
Vermillion, Uriah, Athens.
Wallingford, W. H., Princeton.
Wood, A. D., Bluefield.

McDowell

Anderson, J. H., Bluefield.
Bean, W. P., Keystone.
Bragonier, R. K., Keystone.
Brewster, G. W., Roderfield.
Camper, H. G., Welch.
Clark, L. H., Kyle.
Cochrane, C. C., Kimball.
Cook, W. E., Pageton.
Coulton, N. F., Filbert.
Cox, L. E., Mohawk.
Daniel, S. A., Welch.
Davis, J. E., Welch.
English, J. W., McDowell.
Evans, G. P., Iaeger.
Evans, H. P., Keystone.
Forgeson, W. F., Premier.

Hall, W. C., Welch.
Hatfield, D. D., Yukon.
Hicks, Chas. F., Welch.
Irvine, Alex., Ashland.
Johnston. W. L., McDowell.
Killey, J. C., Vivian.
Lambert, L. R., Twin Branch.
McCarty, J. L., Berwind.
Matney, T. G., Iaeger.
Mitchel , R. C., Anawalt.
Peck, W. L., Coalwood.
Peters, E. F., Princeton.
Peters, I. F., Maybeury.
Rutherford, A. G., Welch.
Sameth, J. L., Welch.
Shanklin, R. V., Gary.
Shifelbein, H. T., Eckman.
Shockley, E. N., Carreta.
Shull, E. C., Marytown.
Stevens, W. B., Eckman.
Straub, G. L., Welch.
Taylor, J. E., Panther.
Vermillion, E. E., Welch.
Vick, C. W., Jenkin-Jones.
Wetherby, V. L., Welch.
Wilkinson, E. M., Welch.
Williams, W. C., Welch.
Wilson, A. A., Switchback.
Woolwine, C. R., Davy.
Young, W. B., Elkhorn.

Mingo

Boland, L. F., Williamson.
Burgess, W. H., Williamson.
Conley, G. T., Williamson.
Crawley, J. R., Gilbert.
Dotson, W. A., Vulcan.
Hayes, H. C., Williamson.
Hodge, O. P., Matewan.
Irvine, G. B., Williamson.
Jennings, O. H., Williamson.
Kendall, B. W., War Eagle.
Lawson, J. C., Borderland.
Mosley, Frank, Williamson.
Musick, R. M., Burch.
Peery, C. E., Glenalum.
Price, W. H., Chattaroy.
Quincy, Fred Ben., Williamson.
Read, B. J., Red Jacket.
Saunders, U. O., Lobato.
Salton, R. A., Williamson.
Slayden, Thos., Williamson.
Smith, Henry C., Williamson.
Stepp, E. P., Kermit.
Szucs, A., Kermit.
Williams, W. S., Lobato.
York, Wm., Williamson.

Monongalia

Arbogast, P. E., Morgantown.
Arkin, A., Chicago, Ill.
Bonar, M. L., Morgantown.
Borror, W. B. (D), Morgantown.
Boyers, C. F., Morgantown.
Bray, C. M., Morgantown.
Brown, M. H., Morgantown.
Cobun, L. W., Morgantown.
Coombs, F. P., Morgantown.
Edmundson, E. H., Morgantown.
Fisher, R. W., Morgantown.
Heiskell, E. F., Morgantown.
Howell, W. H., Morgantown.
Hughart, J. R., Morgantown.
John, Brinley, Morgantown.
John, B. Clifford, Morgantown.
Kelly, W. C., Morgantown.
Kessell. C. R., Morgantown.
King, H. V., Morgantown.
Lilly, J. P., Morgantown.
Magill, W. S., Morgantown.
Maxwell, C. H., Morgantown.
Maxwell, G. R., Morgantown.
Menzolora, Cosimo, Morgantown.
McBee, T. Jud, Morgantown.
Morris, S. J., Morgantown.
Moser, W. C., Morgantown.
Pfost, D. M., Morgantown.
Phillips, G. W., Morgantown.
Powell, H. C., Morgantown.
Price, R. C., Morgantown.
Scanlon, F. T., Morgatown.
Scherr, W. B., Morgantown.
Simpson, J. N., Morgantown.
Sisler, F. H., Morgantown.
Smith, A. E., Morgantown.
Smith, W. A., Morgantown.
Stout, B. M., Morgantown.
Talbott, S. F., Morgantown,RFD 3.
Taylor, Alfred, Mona.
Taylor, E. R., Morgantown.
Tucker, E. B., Morgantown.
Wade, S. S., Morgantown.
Wylie, C. B., Morgantown.

Ohio

Aikmann, D. M., Wheeling.
Armbrecht, E. L., Wheeling.
Best, D. B., Wheeling.
Bippus, E. S., Wheeling.
Bond, H. W., Wheeling.
Caldwell, J. R., Wheeling.
Campbell, H. P., Wheeling.
Carter, J. T., Triadelphia
Charlton, W. U., Wheeling.
Clovis, C. H., Wheeling.
Clovis, E. E., Wheeling.
Cole, J. P., Wheeling.
Copeland, H. B., Wheeling.
Coyle, A. L., Wheeling.
Cracraft, W. A., Wheeling.
Dalbey, W. M., Wheeling.
Deem, H. N., Wheeling.
Dickey, J. L., Wheeling.
Drinkard, R. U., Wheeling.
Earnest, A. E., Wheeling.
Eskey, J. L., Wheeling.
Etzler, W. C., Wheeling.
Fawcett, Ivan, Wheeling.
Fulton, W. S., Wheeling.
Gaydosh, M., Wheeling.
Gilmore, J. W., Wheeling.
Glass, Earl, F., Wheeling.
Goodwin, A. J., Wheeling.
Griffith, O. H., Wheeling.
Hall, H. M., Wheeling.
Harris, L. N., Wheling.
Henderson, H. A., Wheeling.
Higgins, A. W., Wheeling.
Hoge, A. K., Wheeling.
Howell, J. O., Bridgeport, Ohio.
Hubbard, Harry, Tiltonville, Ohio.
Hupp, Elizabeth, Wheeling.
Hupp, F. L., Wheeling.
Hupp, J. C., Wheeling.
Jones, A. L., Wheeling.
Jones, E. L., Wheeling.
Kaufman, E. L., Wheeling.
Keay, Elizabeth, Wheeling.
Keesor, C. H., Wheeling.
Kelly, M. B., Wheeling.
Klug, T. M., Wheeling.
MacGregor, D. A., Wheeling.
Maier, R. J., Wheeling.
Marschner, J. E., Wheeling.
McCall, J. H., Wheeling.
McCoy, A. V., Triadelphia.
McCoy, O. D., Wheeling.
McClure, W. S., Wheeling.
McLain, W. H., Wheeling.
McMillan, R. M. Wheeling.
Monroe, Mary B., Wheeling.
Morris, W. T., Wheeling.
Morrison, B. D., Wheeling.
Nolte, A. E., Wheeling,
Nolte, Harry F., Beech Bottom.
Oesterling, H. E., Wheeling.
Osburn, J. J., Wheeling.
Peddicord, R. M., Elm Grove.
Phillips, E. M., Wheeling.
Phillips, Howard T., Wheeling.
Plant, E. B., Wheeling.
Quimby, W. A., Wheeling.
Rankin, J. O., Wheeling.
Reed, R. J., Wheeling.
Roberts, F. E., Wheeling.
Ruble, A. F., Elm Grove.
Sammons, W. P., Warwood.
Sheppe, W. M., Wheeling.
Shields, T. K., Elm Grove.
Snider, R. J., Wheeling.
Staats, O. M., Wheeling.
Thoner, J. G., Wheeling.
Thornton, J. T., Wheeling.
Tomassene, R. A., Wheeling.
Tretheway, S. W., Wheeling.
Truschel, C. M., Wheeling.
Vieweg, G. L., Wheeling.
Vieweg, Max, Wheeling.
Walden, J. G., Wheeling.
Webb, W. S., Wheeling.
Williams, M. B., Wheeling.
Wingerter, C. A., Wheeling.
Zervos, Michael S., Wheeling.
Zubok, M. C., Wheeling.

Parkersburg Academy of Medicine

Adams, W. A., Parkersburg.
Ailor, C. W., Parkersburg.
Albert, C. W., Parkersburg.
Barker, O. D., Parkersburg.
Barrows, J. E., Ravenswood.
Boice, R. H., Parkersburg.
Boyers, C. L., Parkersburg.
Bush, S. W., Parkersburg.
Camden, Rolla, Parkersburg.
Campbell, H. M., Parkersburg.
Camp, W. C., Spencer.
Casto, D. C., Parkersburg.
Casto, O. J., Parkersburg.
Conley, Orva, Marshall, N. C.
Cline, W. D., Williamstown.
Connoly, Ira, Hanna.
Corbitt, R. W., Parkersburg.
Crooke, E. W., Parkersburg.
Davis, R. E., Parkersburg.
Dearman, U. L., Ready.
Dearman, A. M., Pennsboro.
Douglass, E. H., Petroleum.
Ferrell, Z. B., Parkersburg.
Fisher, Mark O., Parkersburg.
Gaston, Wade, Parkersburg.
Gaynor, H. E., Parkersburg.
Giltner, H. A., Parkersburg.
Goff, E. S., Spencer.
Goff, E. T., Parkersburg.
Haddox, J. L., Montcoal.
Hamilton, O. L., Vanwood.
Hedrick, E. H., Beckley.
Hill, Dennis L., Wickham.
Hume, W. W., Beckley.
Hunter, R. L., Whitesville.

Goff, J. J., Parkersburg.
Goff, J. T., Parkersburg.
Goff, W. R., Parkersburg.
Grimm, C. E., St. Marys.
Harris, T. L. Parkersburg.
Hartenstein, A. G., Parkersburg.
Hartman, E. C., Parkersburg.
Jeffers, Geo. D., Parkersburg.
Jones, A. P., Pennsboro.
Jones, L. P., Pennsboro.
Jones, W. H. V., Mole Hill.
Keith, T. W., Harrisville.
Kraft, C. D., Parkersburg.
Lawson, J. C., Auburn.
Miller, R. B., Parkersburg.
Moyer, E. D., Cairo.
Muhleman, C. L., Parkersburg.
McQuain, John E., Parkersburg.
Paden, R. H., Parkersburg.
Park, C. E., Parkersburg.
Parks, B. S., Parkersburg.
Pickering, W. D., Lone Cedar.
Price, H. D., Parkersburg.
Prunty, S. M., Parkersburg.
Rexroad, C. W., Harrisville.
Reymer, H. M., Harrisville
Richardson, W. B., Parkersburg.
Robinson, B. O., Parkersburg.
Rogers, J. G., Parkersburg.
Rose, L. O., Parkersburg.
Starkey, Paul C., Ravenswood.
Stone, M. R., Parkersburg.
Veon, H. H., Parkersburg.
Wharton, W. H., Parkersburg.
Widemeyer, R. S., Parkersburg.
Wilson, J. B., Pennsboro.
Wise, S. H. D., Parkersburg.
Wright, E. L., Parkersburg.

Preston

Brown, F. A., Hopemont.
Dailey, W. F., Terra Alta.
Divvens, D. D., Masontown.
Fortney, F. D., Newburg.
Harman, R. D., Kingwood.
Moser, H. N., Terra Alta.
Miller, Blanche B., Eglon.
Miller, Harold, Eglon.
Osborne, A. N., Frum.
Pettit, J. G., Hopemont.
Post, W. H., Masontown.
Pratt, S. A., Kingwood.
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PERIODIC HEALTH EXAMINATION OF THE APPARENT HEALTHY *

By ORRIN SAGE WIGHTMAN, M. D.
New York City

THE MATTER of Periodic Health Examination is after all extremely interesting if you stop to think what the idea represents.

We have heard about the health department and the health officer. From the amount of discussion this afternoon I should judge that your state is very well protected by the proper officials. I am wholly opposed to syndicate medicine; I am likewise entirely opposed to State Medicine. There is a certain phase in the evolution of medicine however which is bringing periodic health examinations nearer to us each day.

At the present time people demand good health. If they are sick they are almost inclined to blame it on the doctor. We have organized health bodies in city, county and state. If an epidemic breaks out the doctor does his best, but in the final analysis the health of the community rests with the central authorities. It always does. In any calamity the central authorities have come to the rescue.

The insurance companies have commercialized our health. If you do not stay well the insurance rates go up; they make you pay for poor health although you are apparently getting money for being sick.

Various health organizations of private character are making intensive studies as to what will prolong life. I was surprised at a statement made by a health worker in New York City a short time ago. He said that in the beginning most public health work had been started by private initiative—by people who had become disgusted with public health conditions and had tried to improve them. All through your state, and through every

* Address before the fifty-ninth annual meeting of the West Virginia State Medical Association at Morgantown, May 25, 1926.

state, you will find that private initiative gets people to thinking. Periodic health examination is along the right line. A point of surprise is that it has not yet become crystallized in the medical mind.

The age is one of prevention and medicine is no exception. If this were not so the Rockefeller Institute and the Carnegie Foundation have been badly misled. After a man has made more money than he can ever use his mind wonders how it can best benefit humanity. Mr. Rockefeller is honestly striving to do this. Men of this type have created opportunities and obligations for us.

The public press have convinced the people they are entitled to better health and, they naturally look to the medical profession. What shall our attitude be? Are we going to wait until we are forced to take the initiative, or shall we drag along until the various state legislatures require this of us?

A week ago Governor Alfred E. Smith of New York signed a bill making it a serious offense to practice medicine illegally in the state of New York. This certainly was good news to the physicians of the state. It was a public act of no mean significance.

Relative to the work we are doing in New York City on periodic health examination? Perhaps my problem is different from yours. I will give you our experience for what it is worth.

You will remember that the A. M. A. has been making a study of the prevention of an increasing death rate in middle life. In addition they are just as anxious to prevent all early causes of disease, realizing that the aftermath in later life calls for a heavy toll. The idea is not really new but the compilation of figures is becoming a definite something upon which we can depend.

If public sentiment demands that we have better public health; if we are to prevent sickness, then we as physicians will have to plan accordingly.

Suppose we have a boy with a hernia which at the present time gives him no trouble—we know the chances are that in time it will. In another we find defective hearing or impaired vision. These and many others are the things which a careful physical examination will disclose.

In the County Society in New York City we had no available funds for starting our work in periodic health examinations. We naturally went to one of the big foundations. We told them that there could be no better way of helping the medical profession than by co-operating in this work. With sufficient funds at hand we then organized our Committee in the County Society on Periodic Health Work. A great deal has been accomplished. We gave a course of lectures on diagnosis and the prevention of disease with pre-clinical signs. These were delivered at the Academy of Medicine by seventeen physicians all trained men in their respective specialties. The response of the medical profession was most gratifying. We had audiences from 300 to 500.

We found that most physicians took too much for granted and did not give sufficient time and attention to physical examinations. It entailed a definite amount of time and should assume nothing. It did however lodge a definite responsibility with the doctor. These lectures seemed a beginning and of value and they were edited and printed in handy book form and I know that the Medical Society of the County of New York will be glad to see that you get copies for a nominal consideration, if you are interested. One of the very best reasons why the physician next door gets your cases is because, as I have already said, you assume too much and examine too little. We found as a part of the system that a questionnaire and filing card were necessary. We also gave the patient a result of the findings which required attention or correction or referred him to a specialist.

The matter of choosing a filing card was of no small matter. There were all kinds and sizes. We finally chose a size which enabled the doctor to place it in his reference files. Everything could not be printed on this card but it covered the essentials. The idea was not to attempt a perfect plan but to build broad enough to meet the amount of time a physician could and would give to this work.

We started a clinic, and when a man came in we examined him thoroughly and placed his records on file. Thus a group of men became interested who in turn were replaced

by another group and so on. The patient likewise became interested in better health and spread the news. This clinic will be successful in proportion to the interest of the people and the physicians in its success. Now about the average physical examination?

How many men take the trouble to use a blood pressure instrument? How many bother to make a careful urinalysis? How many secure blood for a Wasserman? These were the things we had to impress upon the medical profession. There is nothing mysterious, nothing beyond him, but just the practice of care and common sense. It is simply taking time and making the effort. Periodic health examination is for the family doctor, who has the natural and intimate contact with his patient. Across the street from our county health clinic the city department of health established a children's clinic. A doctor in the neighborhood said he had seen no contagious diseases since the clinic was established.

When we deny people the right of a proper examination and are not competent to do it ourselves, we are on very thin ice.

If we are interested in this matter it can very easily be accomplished by educating a group, getting the essentials from our medical schools for a proper physical examination and starting civic bodies in a programme of public education for periodic health examinations.

I have brought two reels of moving pictures to illustrate the work we have been doing in our clinic. The idea is well expressed, but is only the beginning of this type of publicity.

Let me say a word about public health and other public organizations. Maybe we physicians are not good business men. Probably many of us are not, but I want to say this—that the medical profession can never at any price afford to sell its good name. I do not care from whom you take money or who offers to help you, be mighty sure that you do not bite off more than you can chew. Do not get so completely tied up with any organization that you lose your identity. So long as it is ethical you can afford to abide by it; when it becomes unethical, leave it alone. And my experience has been that when the medical profession falls away from the ethics of the profession, it soon dies.

The first step is in the formation of plans; the second step, the formation of some little group. I shall be glad to give you what exhibits I have. You can start with some of these poor people who come to the dispensary. Soon it will be noised about, and people will come in to find out what is going on. Civic bodies will take it up. I think that the proper committee in your state society could well afford to look into this matter. Get the literature and records so far published and work out some little group in one of your larger cities. Do it in connection with one of your clinics until you get the plan worked out.

It is highly commendable for you and me as physicians to advocate this sort of thing, but it is no easy matter to get people to come and have a physical examination made. I doubt if there are a half dozen men in this audience who would voluntarily go and have a health examination. A lot of you smoke too much; I see it from here. Perhaps some of us, if it were not for the Volstead Act, would be tempted. We do not get exercise enough; we get flabby. It is time we take account of stock, everyone of us, and gauge our lives accordingly. All of us have only one ideal, and that is the best health for the longest possible time, and that is what we are trying to bring to other people. In Kings county they made an examination of 100 physicians. I would not dare tell you how many of them fell short of the requirements. The deficiencies were there, and it takes a courageous man to meet this issue in a thoroughly honest way. As long as we are out of pain we forget the intestinal toxemias and incipient diabetes. Then there are the nervous women. Many a woman has been accused of being nervous when she was an incipient thyroid case. Then there are the cardiac cases, and beginning cancer.

It has been a question whether it would be ethical to tell people they should go to their family doctor for an examination but I am sure if our county societies approved of this the proper publicity could easily be offered by our civic bodies and thus eliminate the family physician as his own publicity agent.

With your permission we will now see our Periodic Health Film which was taken by the New York Tuberculosis and Health Association under the direction of the Periodic Health Committee of the New York County Society.

DISCUSSION

DR. W. S. FULTON, Wheeling:

I want not only to extend my personal thanks to Dr. Wightman for coming here but want to tell him that this is one of the most interesting and timely papers to which I have ever listened, and I believe that if we doctors as a unit would carry out the physical examination as illustrated by the pictures we should not have to fight chiropractors or any "isms" that exist today. I agree with him that we are responsible for these cults by mistaken diagnosis or lack of examination. To show the doctor that I appreciate his paper, I want to move that this society go on record as indorsing the periodic health examination.

(This motion was seconded by Dr. C. L. Holland, Fairmont.)

DR. A. P. BUTT, Elkins:

I do not know whether I am below average intelligence, or not, but I do not understand this business and do not know whether we should indorse it, or not. The gentleman said this can be done in half an hour. I am a believer in the periodic health examination. It happens that recently I went to my physician and had him go over me, and it took him three days. Mayo's men take only six or eight cases a day. I believe in this thing, but I do not want us to be under any misapprehension about it.

DR. M. L. BONAR, Morgantown:

Something was said this afternoon which impressed me very much, and that is that matters of progress must come from the people. I know it will be of interest to this body to know that some of our people are demanding periodic health examinations. They are being given in one of our farm camps. A doctor has been engaged for one month to make health examinations. The request has come from the farm men and women of the state who have been reading *Hygeia*. The demand has come. The people of the state are demanding this, and so far as our facilities can do it we are answering their demand.

DR. CHARLES O'GRADY, Charleston:

I may say that for several years periodic health examinations have been made in this state by several life insurance examiners, the Metropolitan, Equitable, and others; and they have also been made in the cities by several hospitals. Some of them make a complete examination of the blood and X-ray every organ in the body. Some of my friends have told me about going to some of the hospitals in the cities and paying $200 or $300 for the complete examination. The life insurance companies do not have it done as thoroughly, and they pay only a few dollars, having their own laboratory to which the specimens are sent. A complete blood examination is not necessary in every case. It should be done where syphilis is suspected. The specimen can be sent to a laboratory for a Wasserman.

DR. J. H. J. UPHAM, Columbus, Ohio:

I do not think it is quite fair to compare the ordinary health examination with the examination made at the Mayo Brothers, for example. Many of those cases are patients that have been referred to them for conditions for which they have to be examined very, very thoroughly. The periodic health examination is the examination of individuals, more or less cursory, for the beginnings of disease and the discovery of defects. It seems to me that this subject has been under discussion for some considerable length of time. A bureau of the American Medical Association has been working on it for a number of years, and a great deal of time and money has been spent in investigation. Really, I think you will waste another year if you put off this matter and say you will investigate the subject. There is one other point, just in that regard, and that is in putting it off for another year we shall lose a great deal of time.

I do not agree with one thing Dr. Wightman said; I believe the public is beginning to demand these examinations, and I think

it behooves our profession to get busy. In fact, as you know, a great many commercial organizations are slipping in ahead of us, using the physician and paying him only a very small fee. They give the client a container and insist that he send a specimen of urine to the home office, thus intimating that the profession are not capable of making an ordinary urine examination. The people are waking up to the necessity for these examinations, and unless we get busy in the near future and take up this work we shall lose a great opportunity, so I would counsel you strongly not to lose any time in investigation.

The motion to indorse the periodic health examination was carried without a dissenting voice.

QUINIDIN: A DIGITALIS SUBSTITUTE? *

By M. L. BONAR, M. D.
Morgantown, W. Va.

QUINIDIN is a close relative of quinin, being its stereoisomer, and obtained as a by-product in the manufacture of quinin. At one time it was used to some extent as a substitute for quinin because it was cheaper. But some unhappy results caused it to be discarded as a quinin substitute, where it remained for many years ostracized from the society of decent drugs, scarcely even considered as a scientific curiosity. Its action on the heart was discovered; then extensive pharmacological investigations were at once inaugurated.

The experimental investigator wants to know in regard to a drug: Where does it act? How does it act? What conditions modify its action? What practical, or clinical, use can be made of these actions? Accordingly, before submitting any drug to clinical trial it is necessary to determine these various actions, toxic and physiologic, on such lower animals as the dog, cat, rabbit, and guinea pig; for it is obviously better to kill several of them than even a few human beings to determine the value or worthlessness of a drug.

Thus, extensive experimental tests have been made with quinidin. To illustrate briefly the procedure, I cite the work of Korns (1) on dogs, who has confirmed the work of Lewis (2) and his associates in this field:

Korns anesthetized his dogs with ether, made observations by means of the electrocardiograph on the spontaneously beating heart, then injected quinidin sulphate intravenously, and continued the observation. An analysis of the electrocardiograph tracings showed the following:

1. Invariably an ultimate retardation of the rate of beating, frequently with a temporary acceleration, which is independent of the action of atropin.

2. A slowing of the rate of impulse from the auricle to the ventricle, but without a complete blocking at the auriculo ventricular node. This disturbance began first, and was of higher grade, in the left branch bundle.

3. Likewise, a slowing of the intra ventricular impulse.

4. An early paralysis of the vagus, in doses comparable to those required clinically.

5. Death by ventricular fibrillation. However, in a parallel series run on guinea pigs in which the respiration was mantained artificially, the death was due to gradual inhibition of the whole heart.

Interpretations of the foregoing analyses are as follows:

1. Retardation of the rate of beating of the heart independent of the action of atropin (which of course paralyzes the vagus endings) indicates that the sino auricular node or "pace maker" is depressed.

2. The slowing of the rate of impulse

* Read before the West Virginia State Medical Association, Morgantown, May 25, 1926.

through the auricle, through the A V node, and through the ventricle indicates that there is a distinct depression of conductivity throughout the whole neuro muscular bundle.

3. The early paralysis of the vagus emphasizes the depressing action of quinidin on this specialized nerve structure, and may also indicate, as suggested by Lewis, Drury, Wedd, and Iliescu (3), that the diminished intracardiac conduction is due to direct depression on the muscle itself.

4. Death in the dog by ventricular fibrillation, and in the guinea pig by gradual inhibition of the whole heart indicates definite toxic effects on the heart muscle.

In summary, the actions of quinidin upon the heart is as follows:

It is a definite depressant, affecting first the stimulus production, then in order, the conductivity, the muscular excitability, and the contractility. The vagus too is depressed early.

This depression of stimulus production, and of conductivity suggests the use of quinidin in two general classes of cardiac disorders:

1 Paroxysmal tachycardias, including perhaps premature contractions: manifestly indicative of a pace maker with a too low a threshold of irritability.

2. Fibrillations and flutters: disorders in the auricles now considered to be due to "circus" movements.

Since quinidin also directly depresses heart muscle it would also have a further value in inhibiting ectopic foci of impulse origins to a degree sufficient to prevent paroxysms of tachycardia . . . if such paroxysms are initiated by such hypothetical ectopic foci. Thus, quinidin as a therapeutic agent owes all its virtues to its depressing actions, first upon the nervous mechanisms, and then upon the heart muscle.

How do these actions of quinidin compare with those of digitalis? As observed in the laboratory, and confirmed in the clinic, digitalis has three outstanding actions upon the heart:

1. A stimulation of the vagus, resulting in a slowed heart. This action can be abolished completely by cutting the vagus nerve or by administering atropin.

2. A progressive impairment of the auriculo ventricular conduction: that is, the impulses passing from the auricle to the ventricle are delayed, and eventually blocked in their passage, resulting of course in our clinical "heart block."

The intra auricular conduction, on the other hand, is not at all impaired. In fact it may be increased, as the auricular contractions occur with unreduced or even quickened rate (Sollmann 4).

3. An increased contractility and excitability of the heart muscle, especially the ventricular.

Thus, quinidin depresses the vagus, while digitalis stimulates it. Quinidin depresses the heart muscle while digitalis excites it. Upon the auriculo ventricular conduction they show similar actions: they both depress it. But upon the pace maker and upon the intra auricular conduction digitalis is with little action, or mildly stimulating, while quinidin is again definitely depressing.

The action of quinidin, then, is similar to that of digitalis in but one respect: in the production of a depression of auriculo ventricular conduction. Where such a depression is desired quinidin would be indicated. Such a situation is found clinically in auricular fibrillation, and in auricular flutter (if we are permitted to consider fibrillation merely an advanced stage of flutter, as electrocardiograph tracings indicate). Moreover, it would seem, in the light of experimental knowledge of quinidin, that in this situation quinidin might have even some advantage over digitalis in that it not only depresses the auriculo ventricular conduction, but it also depresses the intra auricular conduction, thus having a tendency to eliminate the "circus" movements within the auricle, a thing which digitalis does not do.

The experimental data accumulated thus suggests that quinidin should have a definite, though perhaps limited, use in the field of cardiac therapy.

To confirm or refute these observations extensive clinical studies have been made with this drug. To illustrate the findings I will cite a few of the groups studied.

Administration of Drug

Since quinidin is not without some unpleasant and even dangerous effects, and since some patients appear much more susceptible to its intoxications than others, it is necessary to give a preliminary dose of quinidin sulphate to determine this susceptibility. Commonly 0.2 gm. is given, and repeated in two hours. If there are no unfavorable symptoms following this preliminary dose, therapeutic administration is begun on the following day, when from 0.2 gm. (3 gr.) to 0.4 gm. (6 gr.) is given from three to five times daily until normal rhythm is established, toxic symptoms occur, or evidence of inability to change the rhythm becomes apparent. The administration of the drug is then discontinued.

Some Group Studies

Viko, Marvin, and White (5) studied a series of seventy-five cases of non paroxysmal auricular fibrillation and flutter. They made the following observations:

1. Two-thirds of the cases were restored to normal rhythm; one-third maintained the restored rhythm.

2. Although a higher percentage of females responded to quinidin treatment, and more showed relapse resulting in a somewhat less percentage maintaining this restored rhythm: these authors do not consider sex as an important factor.

3. Patients of different ages responded about equally well.

4. Other factors being equal, rheumatic and arterio-sclerotic types of heart disease responded equally well. The response seemed not to be modified by the presence or absence of valvular disease. In this series there were not enough thyroid cases observed to determine their relative response.

5. The importance of the duration of the heart symptoms seemed to depend on two factors: 1. Duration of the auricular fibrillation; 2. Degree of congestive failure. The duration of the auricular fibrillation is the most important factor in the determination of both: 1, the restoration of normal rhythm and, 2, in the maintenance of this rhythm when once established.

Cases of less than six months' duration were more likely to be restored, more likely to maintain this rhythm, and more likely to give good clinical results along with the restored rhythm.

In those cases with a present or past history of congestive failure the restoration to normal rhythm was about as frequent as those without failure, but relapse was more frequent: they failed to maintain so well the re-established normal rhythm.

6. All cases of objective congestive failure or tachycardia should probably be digitalized before beginning the quinidin treatment; digitalis does not hinder the response to quinidin and reduces the degree of failure.

7. A fair percentage (especially those with recent fibrillation and little of no objective congestive failure) received a definite benefit from the normal rhythm, apparently additional to that obtained from digitalis alone.

8. Data collected from the literature showed that embolism and sudden death were no more common with quinidin therapy than without. In a collection of two hundred cases not receiving quinidin there was a recorded mortality of about 8 per cent. Of four hundred eighty cases receiving quinidin the mortality was 4.5 per cent.

In the opinion of these authors these clinical results justify the use of quinidin in cases of fibrillation of short duration, and with little or no congestive failure.

Burwell and Dienaide (6) studied a series of sixteen cases of auricular fibrillation, taking on each: 1, electro cardiograms; 2, average systolic pressure, 3, vital capacities. In this series, before the administration of quinidin was begun, the circulation was brought to its highest efficiency by rest, and, in most cases, by digitalis. The digitalis was discontinued before beginning the quinidin.

Of these sixteen cases, fourteen reverted to normal rhythm. In eight of the fourteen the regular rhythm persisted. In all these cases remaining regular there was a marked improvement in health. Of the six that relapsed: not one was improved in health, even during the period of temporary regularity. Three of the series died, one from embolism from an intra auricular thrombus.

The observation of these authors, in addition to those already made, is: that the ter-

mination of auricular fibrillation is of little significance unless the health of the patient is improved.

Carr and Spoeneman (7) studied a series of sixty-one cases of auricular fibrillation with all stages of debilitated hearts compatible with walking about. They were socalled "old cardiacs." Most of them had received digitalis at some time previously. In this group only 28 per cent were restored to normal rhythm. Upon this series they observed the following:

1. The average change of blood pressure on the whole series was a fall of ten points systolic.

2. A rapid ventricular rate occurred in thirteen of the patients.

3. Rheumatic cases showed no greater tendency to return to normal rhythm than others, but when once established showed greater tendency to maintain this rhythm.

4. A resumption of normal rhythm is more likely to occur in cases of recent onset of fibrillation.

5. This resumption of normal rhythm is of great subjective relief to the patient. He is greatly pleased.

In the opinion of these authors, the restoration to normal rhythm is of great value as an aid to maintain compensation; also, that even in cases of long duration of fibrillation, benefit *may* be secured by the use of quinidin.

As Wolferth (8) has summarized: the results of the use of quinidin are excellent in cases of auricular fibrillation of short duration and good compensation, but is of little value in fibrillation of long standing, and is contra-indicated in the presence of advanced heart failure. Digitalis rather than quinidin should be the first remedy used in flutter (to produce a fibrillation).

Clinical data also indicates that quinidin shows promise of being valuable in the treatment of paroxysmal rapid heart action, but appears to have no value in the treatment of simple tachycardia, and very little in extrasystolic arrhythmias.

The experimental findings are therefore confirmed by the clinical observations in a very satisfactory manner: that quinidin is of benefit only in those conditions in which a depression of impulse conduction, or an inhibition of impulse production is indicated. These conditions are represented clinically in auricular fibrillation and paroxysmal tachycardia.

Quinidin is therefore NOT a general substitute for digitalis, but in this limited field it is a valuable adjunct, and in selected cases may show a distinct advantage over digitalis.

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DISCUSSION

DR. D. A. MACGREGOR, Wheeling:

I note that turn where you will in the literature on quinidin, you will find numerous reports of sudden deaths and of deaths from emboli following its use. Really it is to be expected from a drug like this, which is a universal depressant. In the paper Dr. Bonar told us it depresses the pacemaker of the heart, depresses the auriculoventricular conduction, depresses the vagus, depresses the heart muscle—why, it is the wet blanket of the pharmacopeia. It depresses everything in the whole cardiac circle. At best, quinidin finds its use in those cases of paroxysmal tachycardia and in fibrillation that has not been existing for a very long time. Fibrillation that has persisted over a period of years does not yield kindly to the use of the drug, and when the rhythm is restored it is likely to relapse again. Quinidin finds its best use, then, in those arrhythmias which have not persisted for a very great length of time.

DR. O. B. BIERN, Huntington:

Dr. Bonar's paper is the kind of paper of which we should have many more before every medical meeting, because it is a distinct slap against empiricism. Doctors are still giving quinine for common colds, when we have no exact data on which to base it, and they are still giving calomel for supposed liver troubles. Dr. Bonar has taken for his subject a drug which was used empirically, then discarded, then found in the laboratory to have distinct therapeutic value.

There are some points on the use of quinidin which I think Dr. Bonar did not stress enough. One is that in giving quinidin the ventricular rate is often accelerated to the point where the patient is uncomfortable. That is one reason why quinidin should not be given alone but only after good dititalization. Quinidin is rapidly eliminated. To get the effect of quinidin administration it must be carried on over a period of twenty-four hours, day and night. If you give it only during the day you lose the effect of your dosage.

Recent literature seems to indicate that the complications, respiratory and emboli, do not occur as frequently as in the past, perhaps because we are not giving quinidin to hearts that are decompensated but only to the early cases. If you are going to use only one drug for heart cases, better stick to digitalis. Quinidin is not a drug to give haphazard. I have never seen a heart case yet come into my office, whether pericarditis or what else, that has not had digitalis. If you are going to stick to one drug, don't use quinidin, because if you do many of those cases will not get to a doctor's office at all.

DR. BONAR, closing the discussion:

Dr. MacGregor suggested something in regard to the title of this paper which he did not get to finish, and I will finish it for him. There was a typographical error. I intended it to be "Quinidin: A Digitalis Substitute?" —with the question mark after it.

I thank Dr. Biern for bringing out the whole point of what I wanted to present in this paper. It was my intention and my hope to indicate to you as well as I could the importance of the relation of experimental medicine to that of its clinical application.

ACIDOSIS IN CHILDREN—ITS TREATMENT *

By T. M. BARBER, M. D.
Charleston, W. Va.

IN PREPARING THIS PAPER I had intended to confine myself to the treatment of that condition probably best known as "acidosis". However, I believe those who are not familiar with the subject will understand me better if I touch upon the mechanism which produces it and the types now known.

The condition is so much more common than we had believed; it is no longer a "bilious attack". It is found to be a factor in many cases that are covered by some other satisfactory diagnosis, such as sore throat, pneumonia, and what not. It is very easy to let an acidosis creep upon us, suddenly overwhelm the patient and occasionally cause death before we get busy on a simple line of treatment that would have saved him.

There are varying opinions as to whether acidosis may be primary—certainly it is true that in most instances it is secondary to something else, if we can be keen enough to find it. Why children should be susceptible is not satisfactorily explained. We know their metabolism is faster than adults', that the alkali reserve is smaller in early life and that children will manufacture acid bodies on the slightest or apparently no excuse.

In health, we know that the acids normally formed by combustion of food—carbonic, sulphuric and phosphoric acids—do not alter the slightly alkaline reaction of the blood. The alkalis, chiefly the bicarbonates in the blood and body tissues, are always available to neutralize these acids and carry them to the lungs or kidneys for excretion. When there is an excess of acid produced or when elimination is inadequate, we have a state of acidosis. This does not mean that acid bodies accumulate to the extent of changing the reaction of the blood, as was first thought in explaining this condition, for it was soon shown that a blood reaction of neutral, much less that of acid, is not possible and have the patient live. While an excess acid body pro-

* Read in the Section for Internal Medicine, fifty-ninth annual meeting, West Virginia State Medical Association, Morgantown, May 26, 1926.

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duction starts the process, it is the rapid loss of alkalis in the body which have rushed to handle the situation, that causes the symptoms. This explains the earliest and most valuable sign we have in the diagnosis, "hyperpnoea". When the alkali of the blood is so diminished as to be unable to carry all of the usual carbon dioxide to the lungs, the respiratory center in the brain is stimulated at once, making the lungs expand faster and deeper in order to aid pulmonary elimination.

So we have a child who has become slowly restless, fretful and perhaps excitable, later becoming disinterested and even stuporous, usually with some fever. There are circles under the eyes, the skin becomes doughy perhaps, especially if vomiting or diarrhoea are present. Vomiting is not a symptom of acidosis and when it occurs, as it may, even before the acidosis is evident, it is due to some other factor.

Thalheimer, who has done a great deal of pioneer work along this line, thinks that the acid or ketone bodies result either from an insufficient amount of carbohydrates entering the body, or from a disordered metabolism of carbohydrate. We know that starvation, which causes the body to draw on its own fat without carbohydrate to burn with it, will cause an acidosis and we know that diabetes, where the carbohydrate metabolism is defective, causes an acidosis very promptly. So it seems just as reasonable to assume that in these non diabetic acidoses there is a disordered carbohydrate metabolism. Recent research has proven that such is the case in acidosis associated with infections, and infections are usually part of the picture. Supplying these cases with glucose or other quickly assimilated carbohydrate certainly enables the body to burn up these acid products and gives it a chance to replace the loss of alkali.

Before mentioning the clinical types now known, I will stress the fact that acetone on the breath and in the urine are not enough to give a diagnosis of acidosis. Within a short time I think this will be generally appreciated by all of the profession for it has been emphasized strongly since the real processes of the condition have been explained. An acetone breath and acetone-uria are found almost regularly in infections, inanition and starvation.

The most common type of acidosis perhaps is that caused by the acetone bodies—B-oxybutyric acid, acetoacetic acid and acetone. These are formed when fat is burned without enough carbohydrate present. This type is seen in diabetes, in starvation, in fevers, watery diarrhoeas of infancy and in recurrent or cyclic vomiting of children. In this latter condition the acidosis does not explain the whole picture and there is increasing belief that some other substance is elaborated to cause the vomiting. The acidosis following operations comes under this head also.

Another type is that caused by the overproduction of lactic acid as seen in cases of asphyxia, shock and during convulsions. A third type is seen in decompensated cardiacs, and in massive lung involvement such as pneumonia, empyema and bronchial asthma. This is a carbon dioxide acidosis.

Then there is the type of acidosis resulting when the kidneys are so damaged that the normal acid bodies cannot be excreted.

Finally there is acidosis caused by ingestion of mineral acids and various poisons.

How do we know clinically when acidosis is present? Look for hyperpnoea first. Without this constant deep breathing, with an absence of cyanosis you cannot make a positive diagnosis. A fruity odor to the breath and acetone in the urine are not sufficient, although they rouse your suspicions. Laboratory tests can show an impending acidosis and we should be able to do at least one of the three easiest:

1. The Marriott test for ascertaining the carbon dioxide tension in the air of the lung alveoli.

2. The determination of the bicarbonate reserve in the blood by the method of Van Slyke.

3. The alkali tolerance test of Sellard.

The first, in which air from the lungs is rebreathed several times into a rubber bag and then passed through an indicator solution which is compared with standard colors, is easy and simple but requires a special apparatus. The second requires elaborate technique and a knowledge of blood chemistry. This is not so useful for the general

practitioner unless he has access to a laboratory. The third, the alkali tolerance test, is the most practical for general work and consists in using an indicator more delicate than litmus, a solution called "cresol purple", to tell you when you have rendered the urine alkaline after giving test doses of sodium bicarbonate by mouth or in the vein.

In health only one to two grams of bicarbonate are needed to change the color of the indicator, while in acidosis 10 to 20 times this amount is needed to alkalinize the urine.

As to treatment, we have now a specific unless there is some underlying condition too severe or the case is seen in extremis. We must break the acid formation. First in importance is carbohydrate in some form. Glucose has proven the easiest form to handle, especially in the first stages. It can be given in the most obstinate cases, if we persevere. If vomiting is not a factor, a five to ten per cent solution by mouth every two to four hours, in amount governed by the age and ability of the child to handle it, is used. If mouth administration is impracticable, use a five per cent solution by rectum every three to four hours, two to four ounces at a time. The drip method may be the better way. The surest, quickest and best way is by vein, of course, using a five or ten per cent solution, governing the amount by the body weight, ten c.c. of a ten per cent solution per pound.

Within the last six months, Tisdall, Drake and Brown of Toronto in studying the carbohydrate metabolism of normal infants found no ill effects from subcutaneous injections of ten and fifteen per cent glucose in several thousand cases. With reasonable care we may use this route for glucose giving ten c.c. per pound.

I have been unable to find any mention of the use of glucose with insulin in the recent textbooks, but it is coming into vogue rapidly and has given us a wonderful remedial agent in this condition. With glucose alone, the patient slowly improves, depending upon his ability to handle the glucose. With insulin and glucose a desperately sick patient will be wide awake, asking for food, acetone gone from the breath in two to four hours. In other words you supply the carbohydrate into the body, burn it for the body, and in the process, burn the acid products, giving the body a rest and a chance to replace its alkali. The disappearance of symptoms is spectacular.

Make sure your patient gets the carbohydrate, then give insulin in amount of one unit for every two to three grams of carbohydrate given. Thalheimer in 1923 was the first to report this combined use of glucose and insulin in non-diabetic acidosis, a series of twelve cases, not in children, however. In the days when this condition was called a bilious attack, thorough purging and starvation were usually instituted. Now it is easily seen how important it is that purging and starvation be avoided and utilizable food be given as soon as possible. After glucose has tided over the crisis, carbohydrate, as thick cereals and sugars must be given in small quantities every two hours or so, as the child is able to take it. Honey, malted milk, milk chocolate, candy, caramel, lump sugar, and sweetened fruit juices are also of practical value. In those cases where vomiting has been marked orange juice sweetened started twenty-four hours after the initial glucose treatment is usually well tolerated. It is just as well to avoid fats, even whole milk, until a few days after the acute attack.

Rarely insulin may have to be repeated, usually one injection along with the glucose is enough to clear up the symptoms. The timing of the administration of insulin is the same as that in the treatment of diabetes. If given with intravenous glucose, it may be injected with the glucose solution, but the subcutaneous route is preferred by most men.

As to alkalis, they are placed second in importance by our most progressive therapists, Marriott, Gamble, Hess, Schloss and others. Most cases recover very satisfactorily without it, for in giving carbohydrate, and food, and insulin, if possible, to burn it, you are relieving the drain on the alkali reserve by removing the acid bodies. This breaking of the acid formation stops a vicious circle. And the food thus given is a source of alkali to the body. If you do use alkali, the dose by mouth is one to two grams in infants, or five grams in older children about every four hours. Test the urine with

cresol purple at frequent intervals, one drop to a small amount of urine, and push the alkalis until the green color changes to violet or purple. The mother can do this test easily. If given intravenously a four per cent solution of sodium bicarbonate is used, giving fifteen to twenty c.c. per pound of body weight. It may also be given by rectum. Probably of importance almost equal to glucose is water administration. If water is well tolerated by mouth, it should be pushed hard. If it is not you can easily give it under the skin or into the peritoneal cavity, using normal saline or Ringer's solution. The rectal route is desirable when there is no diarrhoea present. Certain mild types of acidosis will clear up promptly on forced fluids without other treatment.

Other important points in the treatment are removal of any possible source of infection after the emergency has been handled. Common sources of trouble are the nasopharynx, ears, throat and tonsils. Bear the gastro-intestinal tract in mind, there may be retention and absorption of decomposed food due to sagging or enteroptosis. The sigmoid has been found to be long and tortous in a good many cases. Striking results have been achieved in cases of recurrent acidosis and in recurrent vomiting by removal of diseased tonsils, other foci, and the correcting of any abnormalities.

One other remedy is blood transfusion which has given splendid results in a few extreme cases.

No attempt is made here to cover diabetic acidosis. That is so much a part of diabetes proper.

In closing I wish to emphasize that we should think of acidosis as a possibility in all acute infections and even in apparently innocent redness of the throat, ear and so forth and treat accordingly. In out and out cases of acidosis, use glucose promptly with insulin to make it at once available to body use. Then find and combat the underlying cause. The condition is liable to recur if this is not done.

The alkali tolerance test of Sellard is a simple and accurate test to corroborate your diagnosis. Diagnosis should be based chiefly on hyperpnea to be a sure one. Carbohydrates can be administered by one of several routes. The physician who can give salvarsan by vein can give glucose by the same route. A glucose solution for intravenous use must be a fresh clear solution and autoclaved within seventy-two hours.

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DISCUSSION

DR. C. L. HOLLAND, Fairmont:

In undertaking to write an essay on the subject of acidosis Dr. Barber took a very broad subject. I want to congratulate him upon the thoroughness with which he covered the matter in the time that was allotted and I want to say in his behalf, that it would be quite impossible to cover the subject in all its phases in a paper three times the length of the one he presented to you.

The doctor spoke to you of the different types, and I shall say nothing in that regard. In the few remarks I make I want to deal simply with the matter of treatment. My remarks will have to do, mostly, with that type of acidosis which we encounter as a complication or sequel to cases of recurrent vomiting and diarrhea. I commend what Dr. Barber has said in regard to the use of glucose with insulin. While I have had very little experience with that method of treatment, it certainly is rational, and in extreme cases is

a life-saver beyond any question of doubt. The best treatment of acidosis in any and all cases is prophylaxis, or prevention. That is accomplished by the administration of water, by the exhibition of a sufficient amount of alkali, by preventing the formation of acids, and by promoting the elimination of acids and their salts when formed. Water is the most valuable agent at our command in the prevention of, and in combating these conditions, and frequently is all that is necessary. Oral administration is the most desirable means of supplying water to the tissues. In cases of diarrhea it is very probable that a sufficient amount of water can be gotten into the patient by this means. If, however, the patient is a recurrent vomiter, it is not possible to get in and have a sufficient amount of water retained. In such cases I have found the Murphy drip given through the nose into the stomach a very valuable procedure. The technic is simple. Pass a small rubber catheter through the nose down to the cardia. Anchor it to the face with a piece of adhesive plaster, and allow the water (either tap water or salt solution) to flow in at the rate of 15 to 20 drops a minute. The rationale is that the tissues take up the water as fast as it is administered and there is not enough water in the stomach at any time for it to be expelled. Water by the rectum is a valuable method but in cases of diarrhea the bowel will reject it and you will not be able to get in a sufficient amount by this means. Salt solution intravenously is valuable, as the doctor said, but it has the disadvantage that it must be often repeated and the amount of fluid that can be gotten into the tissues by this means is relatively small. And these patients, you will find, require a great quantity of water. Salt solution by hypodermoclysis is valuable, but has the disadvantage of being painful, and the amount that can be given by this method is frequently inadequate.

I have found the intraperiteneal route most satisfactory. Salt solution, Ringer's or Locke's solution, may be given by this method, in amounts of from 200 to 500 c.c., depending on the age of the child. The latter are preferable, since being isotonic they are less likely to disturb the salt balance. The clinical indications that enough water has been supplied are a return of the skin to its normal elasticity and the output of an adequate supply of urine.

Sodium bicarbonate should be administered by some one of the methods that the doctor has detailed. It is wise to determine when a sufficient amount has been given by one of the tests he has named. That of Sellard, with cresol-purple, being easily applicable, is the method of choice. I have seen one case of very marked general edema from an excess of bicarbonate. It cleared up promptly, however, with no apparent ill effects. There are good theoretical as well as practical reasons for the hypodermic administration of magnesium sulphate solution, during the period when massive doses of bicarbonate are being given, to guard against the possible development of tetany. You have been told of the importance of the administration of carbohydrate in some form. Glucose is preferable and may be given by mouth, per rectum, or intravenously as found expedient, and in amounts suitable to the age and condition of the child.

The measures you have heard outlined may relieve an acidosis, but unless the underlying cause is found and removed the condition will likely recur. If an acidosis continues unrecognized or untreated until the body tissues have sustained sufficient injury, the case will end fatally even though the acidosis has been relieved.

DR. A. A. SHAWKEY, Charleston:

I want to commend Dr. Barber for this paper. No fault can be found in what he has given us as to the method of treatment and all that. I am wondering if some of us who are practicing in the outlying districts are not a little at a loss to handle our cases when we have not access to hospitals and laboratories. I believe 90 per cent of our cases of acidosis can be treated before they require hospitalization or any major method of treatment, and I am wondering if just a little practical method of treating these mild cases would not be of value to some of us.

I have no fault to find with the doctor's paper,though I differ with him on one or two points. He says vomiting is not a symptom

of acidosis. In my experience it is a symptom. Most of my cases, I have found, are ushered in by severe vomiting, and that is the first symptom to be dealt with. He mentions hyperpnea as the first symptom, but that comes on only in the severe stage, and I think we should control the case before it comes to that. We had a large number of cases in Charleston last summer, which accompanied an epidemic of influenza. Insulin and glucose have to be used in severe cases. The Murphy drip by mouth or rectum is good. A large percentage of these babies are very nervous and restless, and you will find it impossible to use the Murphy drip either by nasal tube or rectal tube in a large number of these cases, and it is necessary to treat them by some other method.

Dr. Barber spoke of the intraperitoneal route for injecting fluid. The intraperitoneal route is harmless and easy, and by it you can give a much larger amount of fluid than by any other means, and in many cases it is preferable.

I spoke of some simple means of treatment. In a number of these cases you can not force fluids by mouth, because they can not take them, but in the majority of cases you can use a weak sodium bicarbonate solution and give an abundance of fluid in this way. There are very few of the beginning cases that will not respond very quickly. A case came to my office, a four-year-old child that had a history of some acute infection and had been vomiting for six weeks. The last few days it had gotten so bad it could not take fluid. Everything had been tried, calomel and everything else. I had the nurse put one dram of bicarbonate of soda in half a pint of ice-water and gave a teaspoonful every ten minutes. She did not vomit after the first dose. If you will try that treatment you will find that the ice-cold soda solution will stop the vomiting and the patient will respond to that type of treatment.

Orange juice has been recommended instead of the soda solution and in 1 or 2 per cent of cases is successful where the soda fails.

The majority of these cases develop a very foul smelling stool in which the bacillus bulgaricus or the bacillus acidophilus is indicated, and I find that after a few hours of soda solution the bacillus bulgarcus gives me better results than any other method of treatment that I have tried.

We must keep in mind the fact that acidosis is not a disease but a group of symptoms, and be on the alert to detect the real disease back of the acidosis and adjust our treatment to that causative factor whatever that may be.

DR. J. T. THORNTON, Wheeling:

I was very much interested in the paper, and should like to say a few words in regard to the administration of insulin. From my experience I agree with Dr. Barber that the effect is dramatic in many instances, and it is a most valuable procedure. In the first place, as to the amount of insulin that should be used with glucose, I think the doctor stated one unit for every two or three grams of glucose, and that has been my practice, too. I notice that Dr. Marriott, in a fairly recent article, states he used one unit of insulin for one and a half grams of glucose. This seems to me in the case of children to be just a little bit dangerous, so I usually use one unit to two and a half grams of glucose. I always use a 10 per cent solution, never anything weaker. I think special reference should be made to the slow injection of the glucose. If you inject the glucose rapidly you very often get a severe reaction that you will not get if you inject it slowly. Then the slow injection enables the glucose to be utilized without spilling it through the urine. In order to secure that slow injection I use an apparatus consisting of a three-way stopcock with three pieces of rubber tubing, one dipping into the flask containing the glucose, one connecting with the needle that is in the vein, and one connecting with the Luer syringe. With this you can time the speed of administration to a nicety.

I was glad to hear the doctor emphasize that acetonuria and acidosis are not synonymous. Acidosis may be due to other acids than the acetone bodies.

DR. BARBER, closing the discussion:

I thank Dr. Holland very much. I am glad he stressed the prophylaxis. I wanted to stress that, but had so much to talk about in

the paper. If we can prevent acidosis it will be well worth while. I am glad he mentioned the Murphy drip by mouth. I have never used it, but think it would be well worth while.

Dr. Shawkey spoke of the difficulty of treating these cases in the home. The severe cases, of course, we want to be in the hospital, but if you are accustomed to intravenous administration you can give it in the home.

In saying that vomiting is not a symptom of acidosis, I am repeating not so much my own opinion as the opinion of those who are doing research work. We know vomiting occurs in many cases of acidosis, but in many cases it does not occur. The prevalent opinion now is that it may occur and does occur aside from the acidosis. We do not know what causes it. Of itself it is not necessarily a symptom of the acidosis proper. In saying hyperpnea is the first symptom, I meant the first positive symptom; we should suspect it before, and can suspect it before then.

If I did not mention the intraperitoneal route for the administration of fluid, I meant to. It is a most valuable means of administering fluid.

Dr. Thornton mentioned the amount of insulin to use with glucose. We know that insulin burns varying amounts of glucose. We know it burns between one and three grams in most cases. In these cases we want to have an excess of carbohydrate in the blood, and it is perfectly safe, I think, to give one unit of insulin to one and a half grams of glucose.

Dr. Thornton also mentioned the slow intravenous injection of glucose. Any intravenous medication, I think, should be given slowly, for we get a much better effect, and it is not so hard on the patient.

THE MANAGEMENT OF THE SEVERE DIABETIC *

By WM. M. SHEPPE, M. D.
Wheeling, W. Va.

IT IS EXTREMELY INTERESTING, in the light of present developments, to survey in retrospect the literature of Diabetes Mellitus previous to 1923. One is impressed with the multiplicity of procedures advocated in the attempted control of the disease in the severe type commonly encountered in hospital practice. To starve or not to starve was a mooted question. Debates as to whether alkalies were indicated or contraindicated, stopped just short of physical violence. One feels that the therapeutic efforts of even the most elect contained a generous modicum of hopeful empiricism. With the discovery of insulin and further advances in blood chemistry, the problem presented by the severe diabetic may be attacked with renewed vigor and greatly enhanced probability of success. Many difficulties remain to be overcome and the accumulated experience of all workers in this field must become common knowledge before final success is attained. We will endeavor to outline briefly the general principles of the mode of procedure which we have found most effectual.

Classification of Diabetics

It is notoriously difficult to accurately estimate the severity of the pathologic process existing in any given diabetic when first observed, provided coma has not actually developed. The degree of hyperglycemia or glycosuria may be highly misleading. Many cases, in which the blood sugar determinations are alarmingly high, frequently respond favorably to treatment and progress to an uneventful convalescence. On the other hand, it is not uncommon to encounter patients with relatively low blood sugars and little sugar in the urine who are difficult to handle

* Read before the fifty-ninth annual meeting of the West Virginia State Medical Association at Morgantown, May 26, 1926.

and in whom the final result leaves much to be desired. The carbon dioxide combining power of the blood is the best indicator of the degree of acidosis present but it is of slight prognostic value as we have observed patients with a C02 combining power of 10 react quickly to intensive therapy and leave the hospital in good condition. Determinations of the fat content of the blood have not proven especially helpful as the degree of lipemia apparently varies considerably from time to time. It must be borne in mind that marked acidosis may be present with little or no acetone or diacetic acid in the urine. The intoxication is apparently due to some other acid or acids, as yet unidentified.

From the clinical standpoint the diabetic patient in acute distress presents a rather typical aspect. The face is frequently flushed and respiration is rapid. The alae of the nose are collapsed. The skin is dry and presents a dusky appearance more easily recognized than described. A slight elevation of temperature and a moderate leucocytosis are occasionally present. The reaction of the patient varies considerably with the individual. Extreme restlessness and complaint of abdominal and precordial pain are sometimes noted but more frequently the patient lies quietly and rouses only to demand large quantities of water. When the above syndrome is well established actual coma may develop at any moment if effectual therapy is not begun immediately. In addition, it may be safely stated that *any case* complicated by the presence of infection or gangrene must be classed as "severe" regardless of the laboratory findings or the appearance of the patient. If the patient is in coma the fact that the unconsciousness is the result of diabetic acidosis must first be determined even if the patient is a known diabetic. Seale Harris (1) reports the giving of large doses of insulin in two cases, in neither of which was the coma due to diabetes. One case was due to uremic poisoning while the second was the result of cerebral embolism.

Treatment

Assuming that the diagnosis of severe diabetes or of diabetic coma has been made, definite therapeutic measures should be begun at once without waiting for accurate determinations of blood and urine sugar. Give at once 40 units of insulin intravenously followed by 40 gms. of glucose either by mouth or intravenously. We believe, contrary to some observers, that the insulin should be buffered in this manner because the fact must be kept in mind that even where hyperglycemia is marked, not more than 60-70 grams of available glucose are present in the circulation at any one time. Moreover, we are very slightly concerned with the hyperglycemia at the beginning of treatment but are bending all our efforts toward reducing and eliminating the acidosis.

The amount of glucose which one unit of insulin will metabolize has been variously estimated at from 0.5 to 3 grams. By giving unit for gram a small portion of the blood sugar is probably metabolized and thus reduction of the hyperglycemia is begun while the acidosis is being combatted. It is well to leave in place a permanent catheter as direction of the intensive therapy about to be outlined depends upon the hourly urinary findings, and the patient may be utterly unable to void when the specimen is most desired. If coma has supervened, it is well to employ gastric lavage leaving in the stomach 500 c.c. of water containing 2 grams of sodium bicarbonate. If the patient is conscious and can swallow we do not wash the stomach.

Administration of Fluids: Many times an apparently unconscious patient may be aroused sufficiently to swallow, in which case 250 c.c. of water are given each hour in addition to the water in which the glucose is dissolved. The laryngeal reflex should always be tested as a semi-conscious patient may be readily drowned by the aspiration of fluid. If the slightest difficulty is encountered in the oral administration of the requisite amount of fluid, recourse should be had at once to intravenous infusions of either 5 per cent or 10 per cent glucose solutions. The ampoules now obtainable containing 25 grams glucose in 50 c.c. saline are convenient and satisfactory when diluted to 500 c.c. This infusion may be repeated as often as desirable and should be supplemented by hypodermoclysis. The latter procedure is of great value as the dehydrated tissues absorb the

saline rapidly. The intravenous injections should be given very slowly with due regard for the additional burden thrown on the overtaxed and probably damaged heart muscle. Foster (2) reports two deaths believed to be the result of intravenous infusions too rapidly given. Proctoclysis may be used to supplement the oral administration of fluids but it is otherwise too slow and uncertain and we have found it of relatively little use. If the veins of the patient are inaccessible, intraperitoneal infusion should be resorted to. If a strict surgical technic is observed, the procedure is safe and deserves to be more generally used. An accurate record of the glucose given per os, subcutaneously, by rectum or by vein, should be kept so that neither too much nor too little insulin will be given. The fluid intake is second only to insulin in importance, and should be maintained at any cost not only during the initial crisis but throughout the course of treatment.

The next step is to clear out the colon by a cleansing enema repeated within the hour if first results are poor. By the time these accessory maneuvers have been completed (½-¾ hr.) a second specimen of urine is obtained and if the sugar and acetone have not materially decreased, 40 more units of insulin are given followed by 50 grams glucose. This dosage may be repeated every two hours until the patient emerges from coma or is very definitely improved as evidenced by urinary findings and general appearance. Orange juice may be readily substituted for part of the glucose, if the amount of carbohydrate represented by the orange juice is carefully recorded. The fruit juice has the added advantage of containing alkaline salts which are essential. No hesitation should be felt in pushing the insulin dosage much further than indicated above provided it is carefully controlled by the urinary findings and is properly buffered by carbohydrate. We have given an initial dose of 50 units followed by two doses of 250 units within ten hours, where indicated by the course of events. Seale Harris reports the giving of 500 units in 24 hours, without untoward effects. Severe hypoglycemic reactions do not occur until the blood sugar has been reduced to 0.04 per cent and this is most unlikely to occur in severe cases. I have never seen an insulin reaction in a patient with a well developed acidosis. The application of heat in the form of carefully placed hot water bottles is essential. Hot drinks, such as strong black coffee, are satisfying to the patient and act as mild stimulants. More intensive stimulation in the form of digitalis and caffeine is often indicated if any evidence of cardiac or respiratory failure is observed.

The use of sodium bicarbonate is opposed by Joslin but in our experience the drug has proven a valuable adjunct to antiketogenic therapy. This is particularly true in the severe type of acidosis exhibiting very little acetone or diacetic acid in the urine. The fixed acids which we presume to be present in this condition possibly combine more readily with the alkali than do the usual ketone bodies.

Theoretically, one gram of sodium bicarbonate for each 84 pounds of body weight raises the carbon dioxide combining power of the blood plasma one per cent. Therefore, as the usual C02 combining power in severe cases is between 20 and 35, volumes per cent we may readily give 30-40 grams per 24 hours without danger of producing alkalosis.

After the patient has emerged from coma or is definitely improved (usually within 24 hours) we readjust the food intake and insulin dosage somewhat as follows:

1,000 c.c.'s of orange juice
600 c.c.'s of skimmed milk
90 gms. of oatmeal (dry weight)

are equally divided into three meals. Thus, at each meal 200 c.c.'s of skimmed milk and 30 grams of oatmeal are given. The orange juice should be given between meals. The food content of this diet amounts to 270 grams of carbohydrates, 28 grams of fat and 20 grams protein. The caloric value is approximately 1300 calories which constitutes an ample maintenance diet for most patients. The orange juice and milk supplies an excess of alkaline salts amounting to 59 c.c.'s of normal solution of alkali. With such a diet one hundred units of insulin per day may be used with safety and this is probably best given in five doses of 20 units each. Each dose is preceded by a urinalysis. In addition, 1000 c.c.'s of water is given by mouth. This

regime is continued for 36 to 48 hours, or until all evidence of acidosis have disappeared. At this point a complete physical examination to discover possible complicating factors is indicated.

It will be noted that the measures outlined so far relate entirely to overcoming the acidosis. Desugarization of the patient is now in order. A definite, measured diet should be ordered which is fairly simple in composition as the patient's power of digeston and assimilation is frequently affected by the profound metabolic crisis through which he has just passed. The insulin and carbohydrate intake is decreased and fats and proteins are added. However, the carbohydrates are maintained in excess of the other two elements until all danger of acidosis is past. The urine is kept sugar free by the administration of sufficient insulin to accomplish this purpose. The proteins and carbohydrates are then increased until the maintenance diet of the patient is reached, and the three essential elements occur in their proper proportions. The proper numerical value of the ketogenic-antiketogenic ratio varies somewhat with different workers. Mosenthal feels that a ratio of 1:1.5 is correct while others feel that a proportion of 1:3 is safely antiketogenic. It is probably improper to adhere to any hard and fast rule as the actual metabolic processes vary so markedly, depending upon the degree of pancreatic function. A simple working basis is to allow 2 grams of fat for each gram of carbohydrate. The glucose value of the protein then furnishes the excess units of carbohydrate which provide a positive balance on the antiketogenic side of the equation.

It is useless to attempt to indicate actual quantities of insulin or weights of foodstuffs which are to be employed at this stage, as these factors must necessarily vary with weight, height, age, severity of illness, etc., of each individual patient. As a general rule the majority of patients who are not grossly overweight may be put on 40 grams of carbohydrate, 30 grams of protein and no fat. This, as will be seen, yields about 60 grams of glucose forming food with a very high antiketogenic value. An average dosage of 40 units of insulin per day is indicated with this diet. If the decrease of blood sugar is unsatisfactory the insulin should be increased until this result is accomplished. It is during this period that hypoglycemic reactions must be especially guarded against. In very obese patients a more liberal allowance of carbohydrate and insulin is indicated because the patient may be burning enough of his own fat to produce an acidosis. In treating diabetes one should never forget the endogenous sources of food. Fat should now be added to the diet in daily increments of 20 grams until about 2 grams of fat per kilo of body weight is reached. At the same time the protein is increased until the patient is receiving approximately 1 gram of protein per kilogram of body weight.

The carbohydrate is now gradually increased until a maintenance diet is reached. The insulin dosage must be carefully adjusted during this period of dietary change by frequent blood sugar determinations. Whether it must be increased to metabolize the additional food or whether it may be gradually decreased, depends of course upon the degree of pancreatic recovery as evidenced by the patient's tolerance. During this period of desugarization we prefer to give insulin in three equal doses 20 minutes before meal time. Occasionally the blood sugar is better controlled if the diet is divided into four or even five feedings with the insulin dosage also divided.

No attempt is made at this time to raise the diet to the limits of the patient's tolerance. It is our belief that it is the part of prudence to allow a resting maintenance diet plus 500 calories at the time of discharge from the hospital. From this time on, the insulin is preferably given in two doses—morning and evening, five-eights and three-eighths of the total dosage respectively. By the time the patient is ready for discharge from the hospital, some responsible member of the family must be thoroughly drilled in the details of urinalysis, computing of daily diets by weight, and the recognition of untoward symptoms. While it is often permissible to allow the milder types to forego the use of food scales, it is essential that the severe diabetic should compute and weigh all

food for at least six months after coming under observation.

Weekly visits are required for the first month after leaving the hospital when appropriate changes may be made in diet and insulin. If convalescence is steady and uneventful the intervals may then be much increased but any patient who has passed through a severe diabetic crisis must be impressed with the necessity of reporting at least two or three times a year for examination and additional advice.

Remarks

The physician in general practice should bear in mind the possibility of diabetic coma whenever he is called to see an unconscious patient. The early administration of 30 to 40 units of insulin will often change the entire course of events. If treatment is deferred the prognosis is poor regardless of what is done later. Joslin has said that the first hour is more valuable than all the rest in the treatment of severe diabetes. The situation requires much more prompt and drastic action than the average surgical emergency. It is indeed a dramatic spectacle to observe the early coma patient pass from impending death to consciousness and life by the use of effectual therapy; and likewise, there is nothing more tragic than to helplessly watch coma deepen into death in the neglected cases.

Having given the first dose of insulin, do not thereafter depend on random doses without diatetic balance or laboratory control. The treatment of the severe diabetic is a rather technical procedure and should be carried out by those familiar with the technical details. Even in the most expert hands a certain percentage of cases will die because as Foster (2) has pointed out, cardiac, renal or hepatic damage may have progressed beyond repair.

On the other hand, we have seen many apparently hopeless cases respond to treatment even in the face of extreme age or severe infections so that active treatment should be instituted regardless of the apparently hopeless prognosis and this should be under the personal supervision of the attending physician. It is not sufficient to write the appropriate orders and leave the actual maneuvers to internes and nurses. The physician should lead the attack and not retire from the scene until the patient has passed the danger point.

Summary

1. The picture presented by the severe diabetic is described and the necessity for differentiating between diabetic and other forms of coma is emphasized.

2. An intensive system of treatment is outlined consisting of large doses of insulin properly buffered with carbohydrate; a high fluid intake and appropriate stimulating and supportive measures, the progress and effect of treatment being controlled by frequent urinalysis.

3. Measures leading to the desugarization of the patient consist of an initial high carbohydrate, low fat, test diet. The protein and fat are gradually increased until a maintenance diet is reached, the insulin being so adjusted in the process as to keep the urine sugar-free.

4. After thorough education the patient is discharged on a maintenance diet plus 500 calories but is kept under observation for some time.

5. The necessity for the early instigation of treatment under the personal supervision of the physician himself is emphasized.

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DISCUSSION

DR. ALBERT H. HOGE, Bluefield:

I certainly have thoroughly enjoyed this paper of Dr. Sheppe's. I think it is very timely for the association to have one or more papers on some phase of diabetes, and it should continue this policy each year. I believe we have entirely too many severe cases to be handled, like those mentioned by Dr. Sheppe. We have been educated very thoroughly that it does not get us anything from any standpoint to procrastinate in tuberculosis, cancer and other diseases. I believe, however, there is a tendency on the part of some practitioners to procrastinate in the treatment of the early diabetic. Most

men in our part of the state feel that it is not necessary to refer the diabetic to a proper institution, to be trained, until he has reached a severe stage. Generally they send them in to be given insulin. That is a most unfortunate state of affairs, because there are still some physicians who look upon insulin as a cure for diabetes. I am sure that every one in this audience knows that insulin is only an adjunct, simply a remedy to help a hopeless individual to get back to a normal or nearly normal basis. If that individual is allowed to progress until the pancreas is almost totally destroyed, there is no hope of prolonging that life for more than a short time by the use of insulin. In fact, the day before I came to the meeting, one of our physicians sent me a patient with instructions to give her a diet list and a dose of insulin and let her return home that afternoon. I am sure that all of us who have seen the bad results of the early use of salvarsan when we felt that a few doses would effect a permanent cure, will recognize that we are going through the same stage now with insulin, because diet and the handling of the diabetic successfully in the early stages requires someone. I think, thoroughly trained in all phases of diabetics.

This is a very timely paper and a very thorough one, and when it is published we shall do well to clip it, or file *The Journal*, for future reference, because Dr. Sheppe has covered the subject in masterly form, and I am sure his paper will be of great aid to us in handling our cases.

DR. C. A. RAY, Charleston:

I was asked by Dr. Barksdale, of Charleston, who was on the program to discuss this paper, to express his regrets to this body for his inability to be present, on account of illness in his family.

I feel my inability to discuss a paper like this further than to say that Dr. Sheppe is to be complimented for the writing of this paper, and this society owes to him a very great debt of gratitude for preparing and presenting it to this body. We are all familiar with the ordinary treatment, the dietary treatment of diabetes, and we go on with our patients until they come to the point when they are in this condition of extremis. Heretofore our hands have been tied, as it were, but I feel sure that when this paper of Dr. Sheppe's appears in print we can all take it and preserve it as a text by which we can follow his advice and instructions and through it tide many of our patients over the bridge from which they are liable to drop. I myself am very grateful to Dr. Sheppe for this paper, and I shall follow it up and follow its text with a good deal of interest.

DR. J. L. MILLER, Thomas:

I think Dr. Sheppe's paper is a very timely and most valuable one. I do not know that I can discuss it, but I want to ask Dr. Sheppe a question and also to report my own procedure in two or three cases of this kind. Fortunately, I have never had cases that were in coma when I got them, or afterward. The question is this: What has been Dr. Sheppe's experience with the blood pressure in diabetics? Recently (within the last month) I saw in consultation with another physician a man who has diabetes (at least, that diagnosis was made in the Cumberland Clinic), a man who is in active business, work involving more or less mental work, who had been losing weight and not feeling well. He had had some gastric disturbance, and his urine was found to contain sugar, which, however, cleared up in about three weeks on diet. The remarkable thing is this —that his systolic blood pressure was 84 and his diastolic pressure 50, although he was active all the time. That pressure was taken by three different instruments. When that came to my attention I reviewed several diabetic cases of my own in which I had taken blood pressure as a matter of routine, and I found that in all instances the blood pressure was lower than we would ordinarily find in men of their age. For example, there was one man of 59 or 60 whose blood pressure has never been over 130 at any time I took it, which is fairly low for a man of that age.

One point I wish to bring out which may be of value to some of you who are in practice in smaller communities is that whenever I get a diabetic, if it is at all possible, I send his wife or daughter or whoever is keeping house for him to a nursing home for a week's

instruction in the matter of diet. I send them to Baltimore, as a rule, and I find I have not much trouble with the patient afterwards. The woman is taught in the diet kitchen the actual diet as prepared and weighed, etc. This same man of sixty, three years ago lost thirty to forty pounds in three or four months, and his urine was nearly solid with sugar. He has never had a dose of insulin. He is still on a diet. His wife is not weighing it now, I think; she has become so efficient that she can very largely guess at it. His urine has been sugar-free for two years.

DR. SHEPPE, closing the discussion:

I wish to thank the gentlemen for the very charitable comments in regard to this paper.

As to Dr. Miller's question in regard to blood pressure, there is, of course, a general asthenia in diabetes, which is most often shown by a lowering of the metabolic rate. Practically all diabetics have a lowered metabolic rate, and this goes hand in hand with Dr. Miller's idea of low blood pressure. However, a systolic pressure of 84 is exceedingly low, and possibly some extrinsic factor was affecting the blood pressure.

I like very much indeed the idea of instructing the family. This is a matter in which we have to be extremely careful, and if the family is not instructed properly you have lost the ground which has been gained by intensive treatment. We find that some younger member of the family, a high school boy or girl, learns the diabetic arithmetic much better than many adults.

Many of our most severe diabetics are children and the statement is frequently made that these children offer extremely unfavorable prognosis. Of this I am not entirely convinced. Children are ordinarily fed by their parents such articles of diet as are chosen for them, therefore this factor which offers so much difficulty with the adult diabetic, is eliminated. In addition the children's habits and tastes are not so marked as in adults and they can be more easily guided along the proper dietetic lines. The question arises, of course, whether these severe diabetics ever improve very much or in other words ever raise their carbohydrate tolerance to any great extent. Insulin has not been used for a sufficient period of time to discuss this with certainty. It is true, however, that we have had several cases with a very low sugar tolerance so that they had to be kept on high insulin dosage with less than maintenance diet. Several of these cases have now improved to the point where they are taking more than a maintenance diet with no insulin; apparently by rest of the pancreas they have partly regained their tolerance.

CARCINOMA OF THE ESOPHAGUS *

By B. I. GOLDEN, A. B., M. D.
Elkins, W. Va.

IT IS WELL to bear in mind that the esophagus in its stretch of ten inches presents three constrictions: One at each end and the third where it is crossed by the left bronchus. Our general knowledge of the role played by local irritation in the causation of cancer would lead us to a priori to expect that these three levels of the esophagus would suffer the greatest incidence of this disease. Such is really the fact. The lower end of the esophagus, however, is the most frequently attacked, for here, in addition to possible irritation by the passage downward of food and drink, there is exposure to the acid content of the stomach in regurgitation. There is good clinical ground for the belief that ingestion of excessively hot food and drink is an important etiological factor, even as the Mayos have stressed this as a cause of ulcer of the stomach. Strong alhocolic beverages also seem to have been a cause in many cases. It would be well to popularize these facts

among the people generally. Cases of cancer of the esophagus have occurred in persons under 30 years of age and even under 20. The most common age, however, is between 50 and 60. The susceptibility in men is much greater than in women. In Jackson's series it amounted to 87, and in Vinson's at the Mayo Clinic to 83 per cent. There is a general belief now that cancer of the esophagus is more frequent than was formerly supposed. Portis believes that 20 per cent of all cancers in men are found in the esophagus. This is probably too high an estimate for the general run of cases.

The most common types are the squamous-celled epithelioma, which occurs at any of the three vulnerable sections of the esophagus, and the adenocarcinoma which usually occurs at the lower end of it. The mucosa is generally the primary seat of the lesion but, as the walls are thin, the entire thickness soon becomes involved. When this occurs infiltration of the mediastinum is easy with consequent implication of adjacent organs directly as well as by metastasis.

Our textbooks and general medical literature still persist in limiting their description of the symptoms of cancer of the esophagus to difficult and painful deglutition, pain, hematemesis, emaciation, cachexia, cough, hoarseness, etc. These are highly diagnostic symptoms, some of them being virtually pathognomonic. Vinson, therefore, no doubt is right when he says that "90 per cent of patients more than 40 years of age, without a history of previous trauma who have had dysphagia for a year or less have malignant obstruction in the esophagus." Their value however, is on a par with the symptoms of fecal vomiting in intestinal obstruction, or of a foul and bloody discharge in carcinoma of the uterus. In other words, they represent the later stages of the disease and signify (in cancer of the esophagus) an absolutely fatal termination. With these signs and symptoms as the only ones known to the profession generally it is no wonder that the mortality has practically been 100 per cent and that the belief is deeply rooted almost universally, including the great Mayo Clinic, that the disease is inherently fatal and that nothing outside of palliative measures can be attempted in its treatment. I said "almost" advisedly because recently there has appeared a group of earnest and brilliant workers who insist that in this disease, as in many others, there are certain symptoms and methods by which a very early diagnosis can be made in the vast majority of cases and that if these be made use of it is reasonable to expect that many of these patients can be saved. This in view of the advances which are being made in the technique of thoracic surgery.

Torek divides the signs of this disease into three stages. The first stage extends over the period in which the neoplasm is small and causes no mechanical interference with deglutition. The only evidence of its existence may be slight bleeding, which may pass down and never come to notice, and reflex spasm of the cardia. This cardiospasm is due to irritation of the malignant ulcer by the passage of food, analogous to the production of pylorospasm in gastric ulcer. The reflex and referred symptoms of this stage are more fully set forth by Jackson who gives them in the words used by patients, as follows:

1. "Slight, queer feeling in swallowing, but food went down all right."
2. "A feeling of nervousness about starting, food went down without and trouble."
3. "A feeling of nervousness in the neck."
4. "Vague sensation about the neck as of something wrong".
5. "A feeling of cramp about the neck."
6. "A feeling as if my swallow was not working right, but nothing seemed to stick until here lately."
7. "Food sticking in the throat while eating in a hurry, but it went down itself all right, and I had no trouble for months afterward, though I did not eat in a hurry any more."
8. "A feeling as of a lump rising in my throat." "This occurred in many cases. In some patients it had no relation to eating; in other patients it occurred at sight of food or thought of eating; in other patients at the beginning of a meal, but disappearing after a few mouthfuls had been swallowed."

The second stage, according to Torek, covers the period when the growth en-

croaches upon the lumen of the esophagus sufficiently to produce partial obstruction. It is during this stage that the patient will experience occasional difficulty in swallowing and will ascribe it to too large a morsel or to insufficient mastication. The third stage is reached when some portion of food or some particular kind of food absolutely refuses to pass down. It is at this stage usually when the patient for the first time consults a physician. By this time the neoplasm has either largely or entirely encircled the esophagus, has extended for a considerable distance up and down, and, what is worst of all, has involved the entire thickness of the wall and often has already involved the mediastinum. Myerson reports a case in which the entire length of the esophagus was involved.

One idea in particular we must revise in the symptomatology of this disease, an idea which has undoubtedly played a large part in delaying a correct diagnosis. I refer to the widespread belief that when dysphagia has once occurred it is constant, and, therefore, when it happens to be intermittent the complaint is assumed to be some functional disturbance, such as globus hystericus. Dysphagia can be and often is intermittent in cancer of the esophagus. It is the rule in the early stages when the neoplasm is still small. The dysphagia at this time is due either to the edema of the associated inflammation or to reflex spasm. These incidental conditions will come and go, and with them the dysphagia, depending upon how much the lesion is irritated by food. In the later stages, too, dysphagia may disappear because ulceration reduces the size of the obtruding mass.

Jackson believes that if the profession will become alert and watch for the early symptoms, bearing in mind the possibility of cancer of the esophagus when the symptoms are still very vague, half of the battle will be won. For there are two methods by which an early and positive diagnosis can be made, viz., the Roentgen ray examination and esophagoscopy. While according a high degree of value to fluoroscopic and Roentgenographic studies and urging that they be used in every suspected case, he places his greatest reliance upon esophagoscopy and finds that by it alone a correct positive diagnosis can be made in 92 per cent of all cases, including in this such as have presented no other symptoms whatever. Naturally one would be inclined to believe that such an achievement is possible only in the hands of this wizard. But he records that the same degree of success has been achieved by 78 other esophagoscopists. He asserts that "a cancer no larger than an orange seed can be diagnosed just as positively in the esophagus as on the cervix." On the other hand, Vinson, of the Mayo Clinic, in a personal communication of recent date, to be quoted more fully later, says: "We feel the esophagoscope is of limited value in diagnosis." He further says: "We feel that the lesion is a highly malignant one and that no matter how much surgical technique may be perfected, cures will be few and far between." The surgical profession, I believe, will refuse to accept as final this discouraging dictum. Not because it may not prove a true prediction, but because the human mind abhors hopelessness, as witness the widespread belief in a hereafter, and bcause of the more cogent fact that surgery only in recent times has triumphed over many just such situations.

It is admitted that, as matters stand, cures of cancer of the esophagus are not only few and far between but that they are extremely rare, in fact amounting to mere curiosities. We have the statement of Stone of the Memorial Hospital of New York that radium and deep X-ray have not cured a single case. It is even doubtful whether radium has proven useful as a palliative measure. Operative surgery in America can boast of only two permanently cured cases, one operated on by Torek and the other by Eggers, and very few have been reported from forign clinics. And also, while disagreeing with Vinson's prediction as to the future, one must agree with him as to the situation at the present time when he says that "carcinoma of the esophagus is uniformly fatal, and in treating the disease efforts should be directed along lines of greatest palliation.

In the palliative treatment the surgeon has the choice of two procedures, viz., gastrostomy, and instrumental dilatation of the con-

stricted esophagus. Stone, Case, Jackson and many others believe that gastrostomy is the preferable method for relief and prolongation of life. This, they urge, should be done before obstruction is complete, in fact the earlier the better, if possible as soon as the diagnosis of cancer of the esophagus is made, even though deglutition is still going on. They believe that by stopping the passage of all food the source of irritation is removed and this brings a shrinkage in the neoplasm and a diminution or disappearance of the associated inflammatory condition thus paralleling our experience with colostomy in cancer of the rectum. Some of these go a step further and claim that gastrostomy is not only the preferable method but is the only safe one. They look upon instrumental dilatation as hazardous because of the possibility that this procedure may cause perforation and, even if this does not occur, the likelihood that it will promote metastasis. For these same reasons they condemn the use of the esophageal bougie even for diagnostic purposes.

At the Mayo Clinic, on the other hand, they take the position that "gastrostomy if performed at all, should be postponed until esophageal closure is almost complete. In an article by Doctors Vinson and Moersch last year they say: "In the Mayo Clinic, it has been our custom to dilate malignant strictures of the esophagus with graduated sounds, and we are convinced that this can be done with greater safety, much less discomfort, and far greater relief than gastrostomy. The arguments that have been advanced against dilation are that it is dangerous, that it does not relieve dysphagia, and that it hastens metastasis. In 502 dilations for cancer of the esophagus at the clinic in the last six years, there have been three fatalities, due to splitting of the esophagus; and during the same period there have occurred three fatal spontaneous perforations in a group of seventy-five cases in which dilation was not performed. Fatal hemorrhage following instrumentation has never occurred, although hemorrhage is a frequent terminal event in esophageal cancer. The reason for the insignificant mortality following dilation is that a previously swallowed twisted silk thread is used as a guide in introducing sounds, and this effectually prevents perforation from puncture, the usual complication following the passage of an unguided dilator. The second objection to the passage of sounds, that dilation does not relieve dysphagia, has not been substantiated in our experience. The majority of patients with dysphagia are markedly relieved by dilation of the stricture with a 45 French olive, and deglutition remains fairly normal for from six to eight weeks. One patient had not had a return of dysphagia two and one-half years after a single dilation. Many live in comfort for several months, and if closure recurs, the stricture may be dilated again."

In this connection the following personal communication from Dr. Vinson will prove interesting. He says: "Our opinion in reference to cancer of the esophagus differs very radically from that of Doctor Jackson, in almost every detail. We thoroughly disagree with him in reference to gastrostomy as a palliative treatment. We feel that the esophagoscope is of limited value in diagnosis and no value in treatment. We rarely see a patient with cancer of the esophagus who has any symptoms before the onset of dysphagia and we feel that the lesion is a highly malignant one and that no matter how much surgical technic may be perfected, cures will be few and far between. The reason that Doctor Jackson condems forcible dilatation is, first, that he does not use a thread for guiding sounds through the stricture, and, second, that he has had no experience in mechanical dilatation of malignant stricture of the esophagus. I am enclosing a reprint in reference to dilatation that may be of some interest to you. Since this publication, we have dilated some two hundred additional cases of esophageal cancer, with one split and one spontaneous perforation in a patient who was not dilated."

Myerson and others intubate the strictured esophagus after mechanical dilatation. The tube which can be of rubber or solid German silver is well borne. A few years ago I participated in placing a rubber tube in two cases where the obstruction was high and the

temporary relief afforded seemed satisfactory.

As already stated, the treatment with radium as a palliative measure has generally been disappointing. However, competent and reliable radiologists believe that a patient every now and then is apparently benefitted by such treatment. Case believes that the best palliative results can be derived by a combination of gastrostomy, radium applied within the esophagus, and Roentgenotherapy externally.

I report the following two cases which came under my care for surgical treatment only a few months apart, not because they were unusual but on the contrary because they were in the main typical of our present day experience in their history, course, treatment and termination. They present the usual sad picture which has led me, and I hope will lead you, to greater efforts at early diagnosis with the hope that some day cures from this dreadful disease will no longer be a matter of curiosity.

Case I. Man. Age 73 years. Occupation painter. Habitual user of alcohol in the form of wine and beer. A native of Switzerland but in the United States for 40 years. Admitted to the Davis Memorial Hospital June 27, 1924, but was under my observation for a few months before that. His illness began in January, 1924, with discomfort in substernal region and pain after the ingestion of solid food. Later could take only soft food and still later only liquid. The day before admission obstruction became complete. Had lost much weight. X-ray examinations made a few months earlier showed a definite obstruction at the juncture of the middle and lower third of the esophagus with a definite filling defect. Wassermann was negative. The diagnosis of carcinoma was made, and corroborated by Dr. C. R. Austrian of Baltimore. I performed gastrostomy under novocain locally, supplemented by a small amount of ether inhalation on day after admission. Stomach leathery and friable and glands along lesser curvative involved. Made uneventful recovery. Was out of bed July 5th and discharged from the hospital July 9th. The operation gave him much relief and for a while his nutrition markedly improved. He died August 27, 1924.

Case II. Man. Age 56. American of old native ancestry. Farm manager in recent years, merchant formerly. Habitual user of alcohol in its strong forms. Admitted to the Davis Memorial Hospital November 24, 1924. Patient stated that he had had pain on swallowing off and on for about ten years, but, as the intervals were long, he did not pay any attention to it. During the past two years the intervals had become shorter and the pain much greater. During the past three months deglutition became difficult as well as painful. This became steadily worse until there was complete obstruction 36 hours before admission. Had lost greatly in weight in the past few months. Wassermann negative. I saw him several months before admission and made a tentative diagnosis of carcinoma of the esophagus. This was corroborated by Dr. E. B. Freeman of Baltimore by esophagoscopy who found "a small polypoid protrusion into the lumen of the esophagus, at the juncture of its upper and middle third, which bleeds very easily." Patient withheld consent to operation till the day after admission when I did a gastrostomy which was much simpler than in Case I. He felt better and his general condition improved for a few days. Then his general condition became rapidly worse, part of the operative area broke down and he died December 12, 1924.

COMMENT

These two patients were of widely different antecedants and mode of life except for the alcoholic habit which they both had in common. In Case I the duration of the disease was definitely less than one year. It followed a fairly rapid course and with only a moderate amount of pain. Pain was never a severe symptom. From the condition of the stomach as found at operation it is evident that the disease spread rapidly. One is inclined to believe that a radical operation, no matter how brilliantly executed in this case, would probably have been of no avail if performed after the manifestation of any symptoms at all. The duration of the disease in Case II was probably no less than two

years and possibly longer than that. This patient was a highly intelligent person and I do not feel that I can brush aside his statement that he had had substernal pain for ten years. Nor can I make myself believe that the earlier pain had no connection with the later developments. May he not have had a pre-cancerous stage in the form of an ulcer of the esophagus? Cannot such an idea be entertained in reference to the esophagus as it is in reference to the stomach and elsewhere?

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DISCUSSION

DR. W. S. FULTON, of Wheeling:

I congratulate Dr. Golden for having the the courage to bring this subject before us with its discouragements and hopelessness in the way of treatment. I think that his paper has summarized the opinions of the medical profession of this country very thoroughly and completely. I agree with him that it is possibly the mechanical irritation that is the cause of ulcer in the beginning, and later the ulcer becomes malignant. There are more and more of these cases coming under our observation, I think, as the years go by. Whether it is the rush and hurry and fast eating that is causing it I do not know, but within the last year I have seen twelve and they are most discouraging. As to the question of early diagnosis of these cases, I think that is of particular importance. If we were all Jacksons, using our esophagoscope every day for foreign bodies, we might cases of malignant diseases of the esophagus, diagnose this condition early, but it is mighty hard when a patient comes in with a tickling in the throat, and a little interference in taking food, to insist on his going through what I consider the rather serious procedure of examining the esophagus. This procedure becomes still more of an ordeal when it is carried out by those of us who are not doing this work routinely. In order to make a differential diagnosis between stricture and malignant disease of the esophagus, it is necessary for the operator to be able to pass the scope without trauma. Blood very readily obscures the field and it is very difficult to deal with. Spasm of the esophagus may also interfere with the examination. The X-ray in the treatment of these cases undoubtedly has done good. I recall a case we had in the early part of the year. The patient was a woman 55 years of age, who had lost about 40 pounds in weight. The esophagoscope was passed and we were able to get some material for a microscopical examination which revealed the presence of an epithelioma. Now, whether or not the use of the instrument had dilated the stricture or whether the immediate treatment with the X-ray caused partial disappearance, I do not know, but at any rate within two weeks this woman who could swallow no liquid before, began to drink milk and later she was able to take egg and milk and gained some 15 or 20 pounds while under our observation. This patient left our care and went to Boston where X-ray treatments were continued and her physical condition remained about stationary for possibly six months and then there was a return of the symptoms and she passed away. This case illustrates the futility of our present methods of treatment. Dr. Golden has reviewed most excellently all of the facilities for diagnosis and treatment which we have at hand—the X-ray, radium, and surgery. We are still confronted with the fact that although utilizing the very best of our scientific appliances we have not been able to reduce the mortality rate in this group of cases.

INJURIES TO THE HAND *

By ALBERT G. RUTHERFORD, M. D., F. A. C. S.
Welch, W. Va.

THREE THOUSAND YEARS AGO, the Hebrew psalmist, homesick and exiled beside the waters of Babylon, could invoke no greater final catastrophe then that his right hand should lose its cunning. Just so, we today, in our modern Babylons, see continually how appalling may be the consequences of a disaster which deprives an individual of his hands' "cunning". Yet injuries to the hand, seldom receive the serious consideration which their fatal potentialities almost always warrant, and many a family has been deprived of its bread-winner, promising lives have been lost entirely or wrecked hopelessly, and the sum of human misery incalculably increased because of neglect of what physician and patient alike regarded as an injury too trifling to merit the care and attention which would have unhesitatingly been bestowed on a far less serious trauma the effects of which were more immediately spectacular. In industrial surgery particularly, hand injuries are of the very first importance and in my personal experience there is no type of accident which leads to more disability and deformity, or is productive of more distress or permanent detriment, both social and economic.

Hand injuries may be roughly classified into two general types—those due to extensive trauma, such as crushing injuries; and those where infection has occurred, usually as the result of a minor trauma. Mock collected statistics from a number of sources, and found that in accident insurance records from 10 to 20 per cent of the total disability was due to hand infections. When the hands of those engaged in heavy work were injured, though the actual injury was usually much more serious, the number of infections was far less. For those engaged in light work, where minor accidents are the rule, the number of infections was greatly increased.

Indeed, it was estimated by these same insurance examiners that of all hand accidents, 65 per cent of those which eventuated in disability were the result of minor injuries which had become infected, leaving but 35 per cent due to such apparently serious traumatic accidents as broken fingers, lacerations or crushing of the tissues. The very fact that these are of such a nature as to impel recourse to medical aid, greatly reduces the incidence of infection in the "serious" wound of the hand. We are thus forced to the conclusion that the trifling hand wound is really the "serious" one, and that while the customary surgical precautions and modes of treatment seem to serve every purpose when the hand is severely traumatized, it is the slightly wounded and neglected member which presents the real surgical problem.

I shall, therefore, speak only briefly of those cases of severe injury which demand nice surgical judgment in regard to conservation, and give more extended attention to hand infections, which constitute so large a part of the industrial surgeon's cases of this type. To understand why infection travels so rapidly and widely through the tissues of the hand, and to fully comprehend why its aftermath here is so much more serious than in other anatomical parts, we must bear in mind the structure of the synovial sheaths and the location of the fascial spaces, as well as the nature of the blood and lymphatic supply, and the relation of the various tissues to one another and to the rest of the organism. For much of its knowledge concerning the anatomy and pathology of the hand, our profession is indebted to Allen B. Kanavel, the present editor of *Surgery, Gynecology and Obstetrics,* and the recent appearance of a fifth edition of his book, offers sufficient

* Read by title at the fifty-ninth annual meeting of the West Virginia State Medical Associatiin, Morgantown, May 26, 1926.

testimony to the value which has been placed upon his work. Anatomically, the human finger is one of the most wonderful of living structures, and it has been well emphasized by Thompson—of the Department of Anatomy, McGill University—that when planning to incise the pulp of the finger it is wise to bear in mind that one of the functions of the skin which covers the pulp is that of fine touch and "it is obvious that a mid-line incision into the pulp will leave a scar which will result in the maximum impairment of this function." As from a surgical point of view, the pulp of the finger may be considered a closed space, he also points out that the density of the connective tissue within this space tends to prevent the spread of inflammatory fluids. "Should such develop the result is an increase of tension greater than is usual in other parts of the body." Necrosis of the bony terminal phalynx frequently complicates such an infection as a felon, which can be readily understood when we recall that these phalanges consist of a shaft and a single epiphysis at its proximal end, so that when necrosis begins in the distal phalynx, the shaft is likely to be the chief sufferer, the epiphysis often emerging unscathed. Kanavel tells us that whereas the blood vessels which nourish the shaft of this bone pass through the pulp in order to reach it, those vessels which supply the epiphysis which lies nearer the end, are obliged to rise higher up in the finger, and thus reach the bone without first passing through the pulp. Thus the vessels of the epiphysis are not occluded by the increased tension, while those of the shaft are likely to be. As the flexor and extensor tendons are both inserted at the base of the last phalynx so that they are mainly in the epiphysis, the finger is much more likely to conserve its usefulness than would be the case if these tendons were inserted in the shaft.

Turning the finger over, we find the nail embedded in a tissue which is very rich in blood-vessels and like the remainder of the finger tip, provided with a highly sensitive nervous organization. "The proximal edge of the nail extends much further under the nail fold than do the two lateral edges, and that proximal portion of the nail which is buried beneath the nail-fold is spoken of as the root of the nail. In all but the slightest cases of paronychia the pus is situated between the proximal part of the nail-bed and the root of the nail, which is usually lifted off the bed, though the exposed portion of the nail commonly remains attached. From this situation the pus finds egress by working its way proximally or laterally or in both directions to the edges of the nail, and around those edges to gain the superficial aspect of the nail, and then oozing out from beneath the nail-fold. A severe or neglected infection of the last phalynx may spread upwards by the lymphatics, or if it be on the palmar aspect, by the tendon sheath, since there is no sheath on the dorsum of the digits."

This calls our attention to the importance of the lymphatics of the hand in any consideration of the spread of infection in that member. Jones tells us that those in the skin "compose a maze of anastomotic channels which surround the finger, run on the palmar and dorsal surfaces of the hand, and weave themselves out into numerous lymphatic pathways which follow the lines of the superficial veins. It therefore comes about that lymphatics from the ulnar side of the hand follow the course of the vena salvatella and the basilic vein, and so makes connection with the glands of the internal condyle. Lymphatics from the palmar surface run with the median and cephalic veins to the axillary glands, and the bulk of the dorsal lymphatics follow the same course. But some channels do not end in the axillary vein, for they run in the intramuscular interval between the pectoralis major and the deltoid with the cephalic vein and, following the primitive course of this vessel, pass up into the neck, where they communicate with the lymphatic glands above the clavicle. The lymphatics which follow this course are mostly those derived from the dorsum of the thumb and index finger, and although it is said that there is no real scientific basis for the old-established belief that wounds of this area are liable to be followed by grave consequences, it is certainly true that the lymphatics from this dreaded portion of the hand run a longer course free of the interference of lymphatic glands than any other vessels in

the fore limb." Thompson remarks that "according to authorative investigators there may be an odd lymph node or two scattered anywhere in the course of these deep vessels. such scattered deep nodes may attempt tc arrest the progress of an infection, and may break down and give rise to an abscess which may be situated anywhere in the course of the deep vessels of the limb." But the superficial lymphatics lie just within the superficial fascia, and when inflamed may serve as a warning signal, displaying a red line which marks the spreading path of infection.

Once the tendon sheaths are involved, the extension from one to another follows on strictly anatomical lines. An apparent exception to this is pointed out by Kanavel in the simultaneous involvement of the thumb and ulna bursa without involvement of the radia bursa, the thumb being the primary seat of infection, but he is of the opinion that many such cases reported may be actually errors in observation. We are reminded by Thompson that while the superficial fascia on the palmar aspect of the hand is very dense and fibrous that of the dorsum is extremely thin and loose, which, together with the dorsal inclination of the palmar lymphatics explains why sepsis of the palm usually causes a great deal of swelling and edema on the back. "This suggests that extreme conservatism and hesitancy should obtain before such a swelling on the dorsum is incised, since in the vast majority of cases the seat of the trouble is actually in the palm."

The palm of the hand is divided into three fascial spaces, division being effected by two intermuscular septa which are attached to the shafts of the third and fifth metacarpal bones. The spaces thus walled off are known as the thenar, middle palmar and hypothenar spaces, and it is here that deep abscesses of the palm may have their origin. "Such abscesses may arise from direct infection of the spaces, or by extension of infection from a digit, either along the lymphatics or along the tendon sheaths, the latter being in intimate relationship with the fascial spaces."

Of the sheaths about the tendons on the front and back of the wrists those most important to our discussion are situated about the tendon of the flexor longus pollicis and surrounding the tendons of the flexor sublimis digitorum and profundus. The first mentioned covers the tendon from its insertion into the base of the last phalanx of the thumb, passing beneath the anterior annular ligament to a point above the wrist. Thus an infection arising in the finger end of this sheath can easily travel back into the palm, or by way of the wrist up the forearm. The large sheath covering the two sets of tendons terminate in "a series of diverticula around the flexor tendons to the fingers." Thence infection may travel backward to the distal border of the anterior annular ligament and then to the wrist or forearm. The tendon sheaths of the index, middle and ring fingers are small, but the sheath which surrounds the tendons to the little finger is prolonged uninterruptedly to become continuous with the digital sheath of that finger. "The digital flexor sheaths enclose the flexor tendons as far distally as the insertion of the tendon of the flexor produndus digitorum into the base of the last phalanx. Proximally, the sheath of the little finger is usually continuous with the common flexor sheath. Because of this direct continuity between the digital sheath of the little finger and the common flexor sheath, tenosynovitis of the little finger may spread with readiness to the common flexor sheath, thus extending to the palm or even to the forearm."

Proper treatment of suppurative tenosynovitis should be regarded as a definite surgical triumph, well worthy of the personal attention of the most skilful, and the fact that this treatment must be attentively carried out over a long period of time should not deter the surgeon from keeping the case directly under his own supervision, never delegating to imperfectly trained subordinates the details upon which the ultimate success or failure so largely depends.

The sheath infections often arise from the most trivial abrasions, and frequently the break in the cutaneous surface will be so slight that the patient will have no knowledge that it has ever taken place. Cleveland distinguishes two varieties; a primary tendon sheath infection being one in which there is a direct implantion of the invading organism into the sheath at the time of the original

injury or shortly thereafter from the original wound; while a secondary sheath infection is one in which the sheath has been invaded from a surrounding area of infection, such as an improperly drained abscess overlying the sheath or adjacent to it, or from a distant focus of infection. Rarely infection may be blood borne, as in the two gonococcic infections in Cleveland's series. The other findings in this series are of very great interest. In 34 of the 57 cases, the pus was confined to the digital sheath. Where the pus extended beyond the confines of the sheath there was considerable variety in the paths it elected to traverse. There were extensions to the radial and ulnar bursae, the pus extending above the annular ligament in eight cases. Three ulnar bursa infections extended that far, but only one progressed as far as the radial bursa and the sheath of the flexor longus pollicis. Three infections of the thumb sheath which remained localized there were secondary, the only secondary cases spreading above the annular ligament being two of the sheath of the flexor longus pollicis. "This suggests that the secondary group of sheath infections extends slowly, 75 per cent of this secondary group of infections of the thumb and little finger being confined to the digital portion of the sheath. There seems to be time for the sheath to protect itself against the invading organism. Since 72 per cent of the infections of the sheath of the thumb extended to the radial bursa, while only 42 per cent of the little finger sheath infections invaded the ulnar bursa (the number of primary and secondary cases in each being approximately equal), one may be justified in assuming that the radial bursa is easier of access to the organism invading it from its digital sheath than is the ulnar bursa." In each of the four cases where the thenar space was invaded, the extension was from the sheath of the index finger; and the mid-palmar space was twice invaded from the sheath of the ring finger.

Of the treatment of these infections I cannot speak in any detail, as the subject is far too extended for the time at my disposal. Time is a great factor. I am sure that even an hour's delay may turn possible success into certain failure. All writers agree on the advantages of hospitalizing the patient, and the benefit of complete rest in bed. This is not so easy as it sounds for the very reasons touched upon at the beginning—the failure of everyone concerned to realize the serious nature of these hand conditions. Mock, looking at the matter as an industrial surgeon, concerned chiefly with the loss of time from work, found that the ambulatory cases actually lost more time in the end than did those who underwent hospital treatment, and the final results in the hospitalized cases were uniformly better. It was his opinion also, that many cases of prolonged disability and also of permanent deformity result from wrong diagnosis as to the type of infection and a lack of understanding as to the location of the pus, and inadequate surgical interference—either too small incisions, or at times, too many or too large incisions. To understand how the infection travels and to know the relations and boundaries of the synovial spaces is just as important as to know where to enter the abdomen in order to reach the appendix or the gall-bladder. "In other words, infections about the fingers and hand have too long been considered of rather minor importance and have been treated accordingly, whereas they must be recognized as very grave serious conditions and must be studied and treated by the most approved surgical procedures and every possible adjunct, both local and constitutional, must be employed to hasten recovery and prevent a spread of the infection."

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CASE REPORTS

Double Quinsy with Unusual Sequela

I was called to see a young white man, who gave the following history: Age 33 years, married, father of 5 healthy children. Occupation coal miner, and timber man. Had typhoid fever in 1906, in bed two weeks. Suffered from rheumatism in 1910, unable to work for three months—joints affected. Had mumps, measles, chicken pox and whooping cough while growing up. Had a severe attack of tonsilitis in 1913, and quinsy and influenza in 1918. No veneral history; drank alcohol to excess for six years beginning at age seventeen years.

Present trouble. In December, 1923, developed quinsy on the left side, which I lanced three times during the first week, at the end of that time, he developed quinsy on the right side. On my suggestion I took along Dr. Charles Smith, who opened the abscess. which drained out without any further trouble. One week later his face, feet and legs began to swell. On examination of the urine—which was scanty—it was found to contain much albumin, blood and casts. Systolic blood pressure two hundred. Immediately following this the patient developed a cerebral hemorrhage, which involved the right side of his face, right arm completely, and right leg partially. He was semi-conscious for two weeks following the stroke. On my suggestion Dr. J. E. Coleman was called in consultation, who concurred with me in these findings. One week later, all symptoms present remaining the same, the family requested another consultation, so Dr. A. H. Grigg was asked to examine the man, who found the same symptoms as enumerated above. In all the patient was in bed two and one-half months, and off from work for six months. On May 2, 1924, he came to my office and presented the following symptoms: blood pressure 160 over 90; knee jerks present on both sides; grip in right hand impaired; paralysis in face just noticeable; memory not good; patient quite irritable, and mind not altogether clear; right leg drags some when he walks; right shoulder dropped; appetite fair, bowels move every day; at times unable to sleep well; urine alkaline, specific gravity 1012, no sugar, but a trace of albumin found. The patient presented a typical picture of post apoplectic attack. At this time, 1926, he is able to work, but the mental symptoms, as well as the motor symptoms, remain about the same. The speech is of a peculiar hesitant and scanning character.

E. S. DUPUY, M. D.
Beckley, W. Va.

Read before the Raleigh County Medical Society, June 24, 1926.

The Treatment of Tetanus—Case Report

W. M. SHEPPE, M. D. *and* J. W. MARSH, M. D.
of Wheeling, W. Va.

The following case is deemed worthy of record for several reasons: (1) It exemplifies the frequently successful result of intensive specific therapy. (2) A plan of administration of antitetanic serum is outlined. (3) It is of statistical value in estimating the mortality rate of tetanus under specific treatment.

Patient, N. C., admitted to Ohio Valley General Hospital, August 26, 1926, referred by Dr. G. L. Ramsey, of Powhatan Point, Ohio, with diagnosis of "chronic tetanus".

History—Patient began to develop symptoms suggestive of tetanic involvement about five days previous to admission to hospital. 40,000 units of tetanus antitoxin had been administered by Dr. Ramsey; 30,000 units by the intravenous route and 10,000 units intramuscularly. This was on August 23rd and 24th. At this time one of the wounds on the plantar surface of the foot contained pus. The patient was able to take liquids by mouth until the afternoon of August 25th.

Physical examination revealed a well developed and well nourished white boy about fifteen years of age. The patient was stuporous, but could be aroused. Opisthotonos was marked. There was a moderate rigidity

of the muscles of the jaw producing the characteristic "risor sardonicus." The slightest external stimulus, such as a loud voice, or a ray of light was sufficient to produce generalized convulsions. Swallowing was impossible. The patient complained bitterly of thirst in a high pitched monotonous voice, but efforts to give water by mouth were followed by severe convulsions. Numerous lacerations were found on the feet but no special one could be identified as the probable portal of entry of the infection. No other wounds present.

Temperature 100:4; pulse 102; respiration 30 per minute.

Laboratory Findings—Blood: Leucocytes 28,450. Pmns 88%. Urine: Albumin heavy trace. Red cells, occasional. Pus cells, occasional. Granular casts, occasional.

Lumbar puncture was performed and 25 c.c. of fluid withdrawn. Spinal Fluid: Pressure markedly increased. Clear, four mononuclear cells. Globulin, trace. Complement fixation and colloidal gold negative.

Treatment—The following plan of treatment was employed:

1. General. Morphine Sulphate and Chloral Hydrate were used to control the convulsions and irritability. The room was kept darkened and quiet. An attempt to give fluid per rectum was abandoned as the irritation of the colon tube was sufficient to produce convulsions. Catheterization was necessary for the first four days.

2. Specific. Progress Notes.

Aug. 23—Tetanus antitoxin, 20,000 units intravenously; 10,000 units intramuscularly Administered by Dr. Ramsey.

Aug. 24—Tetanus antitoxin, 10,000 units intravenously. Administered by Dr. Ramsey.

Aug. 26—Tetanus antitoxin, 20,000 units intravenously; 20,000 units intraspinally. The stick of the needle produced severe tonic convulsions.

Aug. 27—Tetanus antitoxin, 30,000 units intravenously; 20,000 units intraspinally. Gas anesthesia required for lumbar puncture. Fluid cloudy, containing 6000 leucocytes as result of meningeal reaction to serum. General condition unchanged. Temperature 103°F.

Aug. 28—Tetanus antitoxin, 15,000 units intravenously; 5,000 units intramuscularly. Convulsions decreased in number and severity. Water per os.

Aug. 29—Tetanus antitoxin, 15,000 units intravenously; 5,000 units intramuscularly. Patient able to take liquid nourishment. Restlessness and irritability much lessened.

Aug. 30—Tetanus antitoxin, 5,000 units intravenously. Continued improvement.

Aug. 31—Tetanus antitoxin, 20,000 units travenously. Relapse. Patient again becomes restless and jerky. Temperature rises.

Sept. 2—Tetanus antitoxin, 15,000 units intravenously; 5,000 units intramuscularly. No further convulsions. Able to take nourishment readily.

Sept. 4—Tetanus antitoxin, 5,000 units subcutaneously. All symptoms have disappeared.

Summary of Treatment

Intravenously	145,000 units	Tetanus Antitoxin
Intraspinally	40,000	"
Intramuscularly	30,000	"
Subcutaneously	5,000	"
Total	220,000	"

Result of Treatment

Patient discharged September 12th (16 days after admission to hospital), with complete abatement of symptoms. General condition excellent.

DISCUSSION

The diagnosis was based on the presence of generalized muscular rigidity including the muscles of the jaw (risor sardonicus); generalized convulsions produced by slight stimuli; dysphagia, elimination of other possibilities and the immediate response to specific therapy.

At the time of admission bacteriologic confirmation was impossible as the portal of entry could not be located.

Government reports for the United States Registration Area show about 1500 deaths per annum from tetanus. Wainwright[1] has recently compiled the mortality rate of tetanus during the last ten years. His figures cover 4000 treated cases compiled from

the experiences of the British Army in France, many industrial surgeons and the surgical services of the large hospitals. According to this author the average mortality rate under various forms of treatment is about 50 per cent although the group rates vary markedly above and below this figure. This figure effectively refutes the all too prevalent impression that all cases of chronic tetanus offer a hopeless prognosis. Such an impression is prone to lead to half-hearted and therefore ineffectual treatment.

The method of administration of the antitoxin is at present unsettled in the literature. Fitzgerald[2] advocates administration of large doses by all four routes, namely intrathecal, intravenous, intramuscular and subcutaneous. On the other hand Freedlander[3] and Wainwright think that the intraspinal route is positively contraindicated and place their main dependence on the intravenous administration of the antitoxin.

According to the statistics of Wainwright where the intrathecal route is used alone, the mortality rate rises to 70 or 80 per cent. A combination of this with other methods results in a favorable outcome in 50 or 60 per cent of cases, but the most successful results are reached by administration of the intravenous route alone.

In the case reported here we do not feel that the intraspinal treatments affected markedly the course of the disease. This method is certainly not to be depended upon alone and the same amount of antitoxin would no doubt have been as effective if given by vein.

On one point, however, all authors agree; that the usual curative dose is pitifully inadequate and recommended as much as 600,000 units when necessary. Freedlander reports the largest number of units given any one patient, namely 755,000.

It is needless to state that the prognosis is greatly affected by the lapse of time between the onset of the prodromal symptoms and the first administration of antitoxin. We feel that the favorable outcome in the case reported was no doubt made possible by the very early administration of the antitoxin by Dr. Ramsey.

SUMMARY

1. A case of tetanus, with recovery under specific treatment is reported.
2. The mode of treatment is outlined.
3. The early administration of adequate doses of tetanus antitoxin is urged.

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ETHYLENE USE TREBLED

"It is interesting to note that the number of ethylene administrations have more than trebled," writes Dr. Myra E. Babcock, chief anesthetist, Grace Hospital, Detroit Mich., in the annual report of that institution, "while there has been a corresponding decrease in the number of nitrousoxid anesthesias." According to this report, the anesthetics given during the year were: ether, 3,144, including four colonic administrations; 422 operations with local anesthetics, novocain being most frequently used; 764 nitrous-oxid and oxygen; and 1,241 ethylene—total, 5,571.—*Hospital Management.*

LABELING INFANTS

The necessity for extreme care in the labeling of infants and checking of names to identify the patients at the moment of delivery of the babies to their mothers was emphasized by the recent exchange of infants in the maternity department of a hospital in New York. Although the error was speedily rectified, the experience of the two mothers might justify the addition of another form of identification to augment the large number already in use.—*Modern Hospital.*

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EDITORIAL

Bone Surgery

It appears to take at least twenty years for a "new" operation to settle down to a stable standard. All of you who have been interested in surgery during the last twenty years have noted this tendency. As soon as some new maneuver is published, been heartily condemned and then reluctantly adopted, the next move is a large and vociferous family of "modifications." Each one of these is accepted or condemned; and finally after about twenty years, according to my observations we reach a standard accepted by almost all.

The appendix has apparently passed through its climacteric safely. The gallbladder is still in the nervous period but is gradually showing signs of standardization; but bone surgery is apparently still in its early adolescence and will have many harrowing experiences before its grows up.

There has been little added to bone surgery in the last five years in the way of fixation or technique; but most bone surgeons have noted some things which at first appeared to be of minor importance, to have assumed major proportions.

The good technique which is adequate for the abdomen is not good enough for bone work. There is no part of the body so poorly equipped for fighting infection; *ergo*, there must be no infection. Fingers, even if gloved, must not touch the wound, and as little trauma and instrumentation as possible must be used. Absolute smoothness of grafts and their receiving grooves should be observed; for little isolated edges of bone will die, and force the surrounding tissues to take care of their detritus.

It is becoming more and more evident to surgeons doing much bone work that the most immaculate technique is at times followed by infection. This may be explained by infected tonsils or teeth. It is very certain that large numbers of bacteria break into the blood stream from time to time. They are usually engulfed by leucocytes. Occasionally they cause an infective arthritis, an appendicitis, or a colecystitis; but let one get in the circulation at a time when you have done a perfectly beautiful Lane plating of a femur. It will jump into this *locus minoris resistentia* with the utmost joy—to your utmost disgust and bewilderment. The longsuffering operating-room supervisor will receive an unmerited rebuke, when an infected tooth or tonsil was the sole cause.

A questionaire on bone work by this Journal would be of immense value to us all. I would answer some of the important questions as follows:

1. No, I do not use wiring in bone work. A properly fitting Lane plate appears more satisfactory.

2. No, I do not use the beef-bone plate any more.

3. No, I do not use the intramedullary graft any more. The Albee graft gives me more consistent results.

4. Yes, I refuse to do orthopedic work in the presence of tonsils, diseased or otherwise (if there *is* any *otherwise* in W. Va.) excepting in children under six.

5. All bone work in adults, excepting emergency work is preceded by tonsil and tooth preparation, which means with me elimination of tonsils and teeth which appear even suspicious under the X-ray.

6. Osteomyelitis operations I follow by an intravenous injection of mercurochrome, with the hope of depressing if not killing residual infection.

7. Incisions should be made in wide semicircles so that no part of an Albee graft or Lane plate is immediately under the incision.

8. I am very parsimonious in the use of catgut in bone work. It is, when dissolved, a powerful digestant and I think it injures bone. I use fine kangaroo tendon instead.

9. It is well to keep final closing sutures high above the graft or plate. The ideal closing suture is one subcutaneous suture of silver wire.

10. And (I hope I will be pardoned for this

empiricism) since calcium is the important element in rigid union I make sure my patient is getting it by giving them calcium in some form three times a day. If they drink milk freely this may be omitted.

C. N. RAMAGE, Fairmont, W. Va.

The Treatment of Pneumona in Infants Under One Year

Pneumonia has for many years been divided, clinically, into two types, namely bronco and lobar. There are, however, many cases that despite the combined efforts of clinician, pathologist and bacteriologist, can not be placed in either group.

It is well to recall that lung tissue may be infected by different forms of bacteria. Therefore, the type of reaction found will be, both macroscopically and microscopically, characteristic of the invading organism. Again there may be multiple infection, and both the local and general reaction modified by the variety of the organisms, their predominence or virulence in the individual case. Furthermore, the whole clinical picture will be lighted and shaded by the resistance or lack of resistance on the part of the individual patient.

Notwithstanding the great amount of investigation done and new knowledge gained concerning these conditions, no new nomenclature has been developed that will enable a reader to visualize at once, a definite symptom complex along with a fairly constant pathological condition. It is necessary, therefore, in any discussion of the subject to adhere to the old classification of lobar and bronco-pneumonia.

Prophylactic inoculation against pneumonia, while showing promise for the future, is not yet, in view of the multiplicity of the infecting organisms, sufficiently specific to warrant its use in infants.

Since pneumonia is a contagious disease the patient should be isolated. If in the hospital this should be rigidly enforced. If in the home all other infants and delicate children should be excluded.

Cases of frank lobar pneumonia need but little interference on the part of the physician, they being self limited. Someone has said that "about 70 per cent of all cases recover with treatment and another 20 per cent in spite of it." Be this assertion true or false, there can be no doubt that many infants with pneumonia are subjected to an undue amount of fussing and meddling, much to their detriment and the curtailment of their chances for recovery.

Contrary to popular belief, there is no drug which if given inside and no application which can be made to the outside, that will exert any directly favorable influence on the pathological processes in the lung. Drugs should, therefore, be given sparingly and with definite indications.

Plasters and poultices to the chest are mentioned only to be condemned. Their application and changing greatly interferes with the patient's urgent need for rest and the conservation of all possible energy with which to resist and overcome the infection. They add to the child's discomfort and if heavy or tenacious, interfere with respiration. Moreover, they rather effectually block up and interfere with elimination from a large area of the skin, which is an important consideration. While the anxious family and solicitious friends insist on these measures, it is the duty of the physician to gently but firmly decline, and see that they are relegated to the place where they belong. They have no place on the baby's chest.

The agent of first importance in lobar pneumonia is an abundance of fresh air. Opinions differ as to whether it should be warm or cold. The late Howland of Hopkins believed that cold air raises the blood pressure, while Morse of Harvard failed to confirm his fiindings. Most authorities believe that the patients are more comfortable in cold air and have more vigorous appetites, but no favorable influence on the rate of mortality has been demonstrated. It is essential that the patient be warmly clothed when kept in a low temperature. Woolen caps, stockings and mittens should be worn, and hot water bottles kept at the extremities.

The thing of second importance is an abundance of fluid. This serves to dilute toxins and promote elimination, as well as reducing the temperature.

Next in importance is nourishment, since

the organism can not long maintain an adequate resistance without fuel. This may present serious difficulties as there is usually moderate and often marked anorexia. It also is necessary to feed with care, to guard against acute gastric dilatation or abdominal distention. In the case of breast fed infants the milk may be drawn, if necessary, and fed from a spoon or bottle, with an opening in the nipple sufficiently large to permit it to flow readily. In the bottle fed baby it is a common practice to continue the regular formula, diluted with an equal amount of water. The writer has found plain buttermilk or some one of the acid milks, when well taken, the most universally satisfactory, artificial food in these cases.

Hyperpyrexia, *per se*, demands no treatment. In those cases, however, showing marked nervous symptoms, delirium or convulsions as a result of high temperature, it should be combatted by means of ice to the head, tepid sponge baths, and, if necessary, coldpacks. Antipyretic drugs should never be used. If there is evidence of undue cerebral pressure or meningism, lumbar puncture should be promptly done and repeated, if necessary.

If the patient evinces pleuritic pain, it may be relieved by the application of mustard paste three or four times daily. This should be continued only so long as the pain lasts. It has no influence on the lung pathology and its continued application disturbs the patient.

For the relief of cough, expectorants are worse than useless, since they avail nothing but to decrease the appetite and disorder digestion. If distressing, the cough should be controlled by codiene 1/30 to 1/20 grain or Dover powder 1/4 to 1 grain at suitable intervals.

If signs of cardiac failure appear, such as irregularity, or lowering of the blood pressure, it must be combatted by the administration of stimulants. There has been much discussion as to the drugs of choice. They include strychnine sulphate 1/300 to 1/150 grain, caffeine 1/8 to 1/2 grain and tincture of digatalis 2 to 5 minims at suitable intervals. Brandy and whiskey have been extolled, and while their value as a cardiac stimulant is questionable, in small doses, well diluted, they stimulate the appetite and are thus of value. Alcohol being an inhibitor of protied metabolism saves the patient's tissues and is therefore valuable.

In case of sudden respiratory or cardiac collapse, recourse should be had to the hypodermic administration of 2 to 5 minims of 1-1000 solution adrenaline or camphor in oil 1/4 to 1/2 grain, repeated in three or four hours.

If cyanosis develops ,it may be combatted by the administration of oxygen. If this is begun, it should be continued as long as the tendency to cyanosis lasts, and not given intermittently as it is usually done.

If gastric dilatation occurs, it may be relieved by lavage and withholding the food for a day. Abdominal distention is controlled or combatted by a reduction or a change in the diet, and the use of enemas. If severe, turpentine stupes may be tried or the hypodermic use of extract of the posterior lobe of the pituitary. While severe and persistent abdominal distention may denote a complicating peritonitis, it more often signifies cardiovascular failure or a general adynamic condition presaging dissolution.

As to specific therapy, there can be no doubt that the anti-pneumococcic serum has a great future in the cases to which it is applicable. To be effective, however, the organism must be typed. As this is beyond the scope of the ordinary practitioner or even the smaller hospitals, its application is and must remain, for the present at least, very limited.

Bronco-pneumonia is the great decimater of the ranks in infancy. It is one of the most potent factors in adding to the infant death rate. It is a terminal condition in many diseases.

Notwithstanding the much added knowledge that has been gained as to etiology and pathology, little or no advance has been made in the ability to treat this disease. The rate of mortality remains about the same as 25 years ago. Knowledge has been gained, however, in the realm of prophylaxis, which is and will ever be the most important means at our command.

Delicate and undernourished children should be protected as far as possible from

all infections, and their nutrition and general health brought up to the best possible condition. They should be protected from undue exposure and guarded against contact with persons suffering from any respiratory infection. Mild and apparently insignificant infections of the upper respiratory tract should never be ignored, but eradicated as soon as possible. Infants suffering from infectious diseases, particularly, pertussis, measles and influenza, should be treated with the utmost care, and carefully guarded afterwards.

Bad hygiene and bad hygienic conditions being often not so much a matter of poverty as of ignorance, the most important preventive measure at our command is the education of the parents.

The treatment of an attack of bronco-pneumonia calls for the exercise of good judgment and much attention to details. If possible, a competent and conscientious nurse should be in charge. As in the lobar type, the room should be bright and sunny and afford an abundance of fresh air. The temperature may be a matter of experiment in a given case. As there is usually an associated bronchitis and troublesome cough, warm air as a rule, is best, because cold air aggravates the cough. However, in those cases that simulate the lobar type, showing large areas of consolidation and but little cough, cold air may be found preferable.

What has been said regarding expectorants and cough sedatives is reiterated here and with emphasis, with the possible exception of one drug, ipecac. This drug, if administered with judgment and in minute doses, is often of value. Mustard pastes to the chest for a few minutes four or five times daily are often of distinct value in relieving a distressing cough. Plasters and poultices are not to be tolerated. If the cough is dry and harassing, the passing of live steam from a boiling kettle, through an improvised tent erected over the bed, for fifteen minutes every two or three hours will be found beneficial. Impregnation of the steam with pungent or irritating drugs had best be relegated to the limbo along with poultices. It sometimes suffices to merely keep a kettle boiling in the sickroom.

What has been said regarding fluid, diet and the conservation of energy applies here.

Great care and diligence should be exercised by the nurse, in bathing, cleansing the mouth and nasopharynx, and in frequently changing the patient's position in bed. Also in keeping the extremities warm. These small attentions are of great importance.

Nothing need be added here as to the use of stimulants and measures to combat cardio-respiratory failure, except to say that their need is apt to be more urgent and for a longer period.

In prolonged cases blood transfusion from a suitable donor has been found of much value. Serum therapy offers nothing of value in these cases.

Convalescence calls for the exercise of care and judgment that the infant may regain its health. Sunshine, open air, and attention to food and feeding are the most important measures. Cod liver oil and iron in suitable form also aid in improving the nutrition and relieving anemia. A change of climate to mountain or seashore where life may be lived in the open is often found of great benefit.

A discussion of the treatment of the various complications and sequela of pneumonia would lead us beyond our alloted space.

.... CLAUDE L. HOLLAND, M. D., Fairmont.

Condition of Acute Appendicitis Cases in Rural Sections After Long and Difficult Transportation

I doubt if there is any surgical disease today so well known and so perfectly understood as appendicitis. Surgeons enjoying practice in the larger cities of the state are, no doubt, well versed in the signs and symptoms of early appendicitis, and I hope that the majority of their cases are of this type and rightly should be if they are consulted by their patients or referred by physicians early enough, for transportation is speedy and comfortable, to hospitals.

We surgeons of smaller towns, while we may be as able as our brothers in cities to make an early diagnosis, this opportunity is so often denied us, and we place the blame on the lack of country physicians and poor

roads. It is sad, but true, that the country doctor is almost a thing of the past. The young doctor, after graduation and internship, today does not, and will not, as it seems to be, settle in the country village and ride horseback through mud for five or six months out of each year. A few are content if the village is on a railroad, and from these few come the "early acute cases" that we see that come from any distance.

It is extremely unusual for us to see a case of appendicitis without localized, spreading or general perotonitis from the country in the midst of winter. Home remedies of all kinds from catharsis to poultices are tried, and when nothing gives relief and the patient steadily grows worse, they are finally brought to the hospital. Transportation is long and difficult, and even though they may arrive on the train, friends have, in all probability carried them several miles to the railroad. But the majority come in trucks, on cots, automobiles and sleds.

I have looked up the last one hundred and thirty-two cases of acute appendicitis that have been admitted to this hospital and operated that have been transported one or more miles. All of these patients were white, the youngest sixteen months and the oldest sixty-five years, and of the total number eighty were women. There were seven deaths. Four of the deaths were from general peritonitis, and three from peritonitis associated with obstruction, acute dilatation of the stomach, and toxic diarrhea. The shortest distance travelled was one mile, and the greatest forty-eight miles. In some cases the entire day was consumed by transportation of less than fifty miles. The average distance travelled was thirteen miles. Practically all operations were done in the afternoon and at night. Ten cases had localized peritonitis in form of abscess. In ninety-five cases we were able to close the abdomen without drainage, and in this group are all the acute forms, including the gangrenous type. The remainder required drainage for a localized, spreading, diffuse or generalized peritonitis.

All of the cases except three stood transportation very well, and only evidenced mild degrees of shock on admission. The white blood cell counts in the cases of peritonitis ran from 6,000 at the lowest to 32,000, the first count in an adult and the second in a child.

Three cases were complicated with pregnancy not exceeding four months, and one aborted three days after operation.

We have had one post-operative hernia in this series, and one case of post-operative pneumonia resulting in empyema. Operations were done with one exception under ether anesthesia, and within three hours after their admission.

Mayo says that pain in the right side and the patient's consent is not enough to warrant removal of the appendix, but by the time we see the majority of our cases of appendicitis no sign or symptom of the disease is lacking.

The only means of improving this condition is by educating the public and impressing upon them the danger associated with severe pain in the abdomen, and the urgent necessity of having the patient seen by a physician EARLY, as the appendix not only seems to enjoy being mischievous but mysterious as well.

C. F. FISHER, M. D., Richwood.

Think Before Speaking

C. C. Johnson, Counselor for the State Medical Association of Nebraska, in an editorial of their Journal, January, 1927, referring to fifteen malpractice suits pending in the courts of Nebraska at this time tersely and appropriately states:

"Each one will cost in money and time approximately $2,000 to defend.

"Every one of these cases can be traced to a volunteered or a paid medical opinion, secretly or openly given.

"The outcome of these cases will depend upon whether some doctor gives a medical opinion in court in the form of a deposition or as a witness.

"No malpractice suit will be brought without a medical opinion.

"No malpractice suit can be sustained without a medical opinion.

"No doctor can be compelled to form a medical opinion.

"Are you going to volunteer the medical opinion that will start another suit or sustain one that is pending?

"Make your New Year's resolution—'No medical opinion to start or sustain in a malpractice suit and no violation of a privileged communication.'"

Each of his paragraphs is a text on which much could be written, especially the question, "Are you going to volunteer the medical opinion that will start another suit or sustain one that is now pending?" A casual remark by a doctor is often construed as an opinion by one of the laity, especially if he is looking for an excuse whereby some unprincipled lawyer may juggle it into a foundation for a damage suit.

If you are in doubt as to how you should answer a direct question it is safer to defer the answer until you can consult other doctors who have had greater experience than yourself. Experience being "the best of teachers" will often guide you safely by unseen breakers."—C. A. R.

The I-On-A-Co Fraud

The forthcoming issue of *Hygeia* will contain a complete expose of Wilshire's I-on-a-co, the newest piece of quack apparatus to come out of the west since Albert Abrams capitalized his so-called electronix reactions. Recent editions of popular magazines, including Mr. Hearst's *Cosmopolitan*, have contained double-page "spreads" of this "magic horse collar," as it is termed by the *Journal A. M. A.*, and it would be wise if every practitioner acquaints himself and his public with the product of Wilshire, the "social crusader, magazine publisher, gold miner, explorer, pioneer city builder, tropical explorer, lecturer, writer, friend and companion of great authors, luminaries of the drama and stage in Europe and America, and now inventor of a magnetic appliance that is banishing pain and suffering from thousands of his fellowmen, not to mention causing a veritable revolution in the whole field of surgery,"—to quote from one of Wilshire's advertisements.

It is probable that Wilshire's gold mining days were never so profitable as now. The claims are that I-on-a-co will cure arthritis, heart disease, diabetes mellitus, paralysis, cancer, Bright's disease, asthma, pernicious anemia, baldness, restores fading hair, goiter, varicose veins, gallstones and prostate trouble.

In the *Journal A. M. A.*, January 22, is an extensive review of I-on-a-co. It reads in part:

"The beauty of the I-on-a-co lies in its simplicity. Out in the golden west, where the I-on-a company has done its most extensive advertising, the Public Health League of Washington, working in cooperation with the Better Business Bureau of Seattle, investigated the I-on-a-co and published a report on it. The better business bureaus, as many of our readers know, are component branches of the Associated Advertising Clubs of the World, and are vitally interested in maintaining public confidence in advertising; therefore, they are opposed to all fraudulent and misleading advertising. The Public Health League of Washington is a state organization which has among its officers the president of the state university, the editor of one of the leading newspapers of the state, club women, business men, university, normal school and high school professors and teachers, pharmacists, dentists and physicians.

"These two bodies in Seattle selected a committee to investigate the I-on-a-co. The committee comprised a technician from a large x-ray apparatus concern, a business man, the secretary of the State Pharmacy Association, the secretary of the Public Health League, two physicians, both of them specialists in physical therapy, the dean of the college of engineering of the state university, the commissioner of health of Seattle, and the construction engineer of the city light department of Seattle.

"The report of this committee was, in effect, as follows: The I-on-a-co is simply a coil of insulated wire (about six and one-half pounds of 22 gage, worth about $3.50) about 18 inches in diameter, with a plug that permits the coil to be attached to an electric light socket. There is a smaller

coil that plays no part in the alleged curative use of the I-on-a-co but plays an all-important part in the magical features of the scheme by impressing the purchaser with the marvelouss potentialities of the larger coil. The small coil is also of insulated wire (about one pound of 18 gage, worth about 60 cents), has its two free ends attached to a miniature light socket containing a small flashlight globe. When the larger coil is plugged into an electric light socket where there is an alternating current (the kind of current that is found in the great majority of city lighting systems), there is, of course, generated within the large coil a weak fluctuating magnetic field. This will cause the flashlight globe in the small coil to light up when the small coil is brought in close proximity to the large coil. This phenomenon, while elementary to a degree to those who know anything about electricity and magnetism, furnishes for the uninitiated that element of mystery which is so necessary to the successful exploitation of any alleged cure for human ailments.

"The I-on-a-co is used by placing this magnetic horse collar over the neck, around the waist, or around the legs of the person who thinks he is going to be helped by a piece of buncombe of this sort. It sells for $58.50 cash or $65 on time. The cost of the materials for making an I-on-a-co should not exceed $5. As a cure for any physical ailment it is not worth five cents." —C. A. R.

The Legislative Program

While it is most too early to give a comprehensive review of all the matters pertaining to medicine and sanitation now pending before the legislature, yet the public policy and legislative committee is much interested in several bills that have been introduced in the House and Senate. Many of the bills introduced outside the knowledge of the profession contain little or no reference to their content and it will be necessary to consider the printed text before a comprehensive report can be made to the membership.

However, Dr. R. .A. Ireland, chairman of the committee, is urging that the membership support the following measures:

A bill removing chiropractors from the public health council and creating a chiropractic examining board. This is in reality a clarification of the existing chiropractic law. Under the existing statute, there is a conflict because the title of the act expressly states that the purpose of the act is to create a board of chiropractic examiners. It then goes ahead to place two chiropractors on the public health council whereas this proviso is not contained in the title of the act. Under the constitution of the state, it is believed that this section is unconstitutional because the constitution expressly provides that all bills shall specifically set forth the aims and purposes of the act. The chiropractic law title does not specify that chiropractors shall be members of the public health council. This bill was introduced in the House of Delegates by Tabor of McDowell, and in the Senate by Senator Hallanan of Kanawha.

Another bill is that which would make it unlawful for any person to obtain any food, lodging, accommodation or service in a hospital with intent to defraud. This places the hospitals in the same class and under the same protection as the boarding houses, restaurants, hotels and actually only amends the existing law, Barnes' code, 1923, section 32, chapter 145.

A third bill would raise the qualifications of midwives. Under the existing law, any woman 21 years old, able to read and write, of good moral character, who has attended expectant mothers during five births and lying-in periods of 10 days each under supervision of a licensed physician, shall be eligible for license to practice midwifery. In other words, 50 days of training to perform a major surgical operation. It is proposed to raise these standards to 30 years of age, a high school education or the equivalent thereto, attendance upon twenty-five mothers under direction of a physician for 10 days each, and forbidding the use of drugs of any kind. The proposed amendment also includes a penalty clause of a

fine of not less than $50 nor more than $500; and imprisonment of not less than 30 days nor more than 90 days, or both.

A fourth bill would provide that physicians appointed to the state board of examiners for nurses shall be actively engaged in the practice of medicine and who at the time of their appointment are in the conduct of an accredited hospital or who are giving instructions to pupil nurses in an accredited training school for nurses.

A fifth bill would provide for the establishment of a second tuberculosis sanatorium in southern West Virginia, the site to be chosen by a commission to be composed of members of the state board of control and the state department of health. Due to the crowded condition of the sanatorium at Hopemont, it has been long urged by physicians in the southern part of the state that provisions be made now to erect a second institution which would be ready for occupancy when the Hopemont sanatorium's building program shall have been completed.

The sixth bill is to amend the act safeguarding and regulating the sale and distribution of certain caustic or corrosive acids, alkalies and other poisons. The purpose of this is to make the state law uniform with other states so that special labels will not be required for West Virginia trade. The bill has been drafted after the recommendations of the committee on lye legislation of the American Medical association and it is hoped it will pass.

"Of course, this is but a small portion of the grist in the hopper," says Dr. Ireland. "As soon as the other bills are printed, a review of their contents will be made public. This promises to be one of the most interesting sessions of the legislature. We hope the profession and its friends will be in position to lend us every aid when the call is issued."

Free Service

Recently there arrived a communication from an insurance company offering "free health test service." It is directed to all policy holders, among the number of which we happen to be one. The enclosures are signed by the medical director. One is headed: "Health is Priceless." One paragraph relates that "the prudent man checks up on his health and has his urine examined at least once a year. This requires the services of a physician or competent analyst and involves some expense. The (blank company) offers this service free to its policyholders and maintains a modern laboratory manned by experienced analysts. The result of this analysis is reported to the policyholder in a confidential letter with any suggestions which seem indicated."

The next paragraph relates that all correspondence in connection with the policyholders' health service is to be strictly confidential and that such will not "be divulged except at the written request of the policyholder." It further says that "results of such a test will not in any way affect the standing of any policy whatever, nor can it be used in any way in the future in case the policyholder applies for any insurance to this or any other company. This information is kept in a file entirely separate from the other records of the company."

Then there is attached a return postcard setting forth that the policyholder desires the service checked below. The only service indicated is that in accordance with the company's offer, "please send mailing tube for forwarding sample for free analysis."

The foregoing conjures up conflicting thoughts: First, will the insurance companies (and we are adding the plural because word has reached us that other companies are adopting similar systems) attempt eventually to pay real fees to practitioners of their own choosing to examine their policyholders and thus interrupt the relationship between the family physician and his patient? Second, will the companies refer the policyholders to their own family physicians? Third, will the companies recommend health examinations by any doctor of the policyholder's choice and pay that doctor a fee commensurate with his ability? Fourth, will the medical examiners attempt to prescribe from their far-off seats for some condition disclosed by examination of the urine?

It is known that one large company has been defraying the expenses of a so-called

public health nurse to visit the homes of its policyholders in a certain city in this state. Whether or not the young lady has referred conditions as found to the family doctor or recommended the company's own examiners or whether she prescribed for the alleged condition of the policyholder's health herself, is not known. Neither do we know if she has attempted to reverse the decisions of the family doctor. There have been rumors, nothing more.

At any rate, the insurance companies all have their competent medical examiners in each locality. All applicants are given most thorough tests. It would seem most worthwhile if insurance rates are lowered so as to permit policyholders to pay for their own health examinations each year, thus retaining that contact between patient and physician that is so essential.

REPORTS FROM COMPONENT SOCIETIES

Lewis

Discussion of malpractice suits was one of the principal topics before the Lewis County Medical society January 13. Also Dr. E. T. W. Hall read an interesting paper on the Indications for Caeserian Section which was discussed by all present. Dr. W. P. King is to read a paper in our February meeting on Public Health.

Officers of the society for 1927 include O. L. Hudkins, president; A. F. Lawson, vice president; Guy R. Post, secretary-treasurer; delegate to annual meeting, Guy R. Post; alternate, E. T. W. Hall; member, board of censors, W. P. King. All of the officers reside in Weston.

GUY R. POST, *Secretary.*

Raleigh

An interesting program was arranged for the meeting of the Raleigh County Medical society January 27. Following dinner presided over by President T. F. Garrett, Dr. A. S. Abshire gave an interesting talk on the First Raleigh County Medical society. This was followed by reading of the constitution and by-laws by Dr. U. G. Cook. Dr. W. W. Hume responded to the toast, "The Present Society." The scientific program included the following:

"Infarct Following Operation On or Manipulation of the Kidney," Dr. B. B. Wheeler, discussion opened by Dr. J. H. McCulloch; "Intestinal Obstruction, with Report of a Case," by Dr. U. A. Tieche, discussion opened by Dr. W. A. Simpson; "Appendicitis," by Dr. J. A. Campbell, discussion opened by Dr. Robert Wriston.

Dr. A. J. Harness of Wheeling was a visitor at this meeting and entered into the discussion.

Ohio

"Surgical Diseases of the Chest" was the subject discussed by Dr. Arthur M. Shipley of Baltimore, before the Ohio County Medical society in Wheeling, January 7. It was the consensus of opinion that it was one of the best, most profitable and as finely a delivered lecture as the society ever heard. Discussion was opened by Doctors J. W. Gilmore and E. E. Clovis.

Dr. Bender Z. Cashman of Pittsburgh, delivered the principal paper January 14 on the subject, "Diseases of the Cervix Uteri," which was illustrated. The discussion was opened by Doctors F. L. Hupp and W. P. Sammons.

On January 21, Dr. Joseph W. Holland of Baltimore read a paper on "Injuries of the Elbow Joint," also illustrated. This meeting was well attended and none present suspected such a long discourse could be made upon the elbow joint alone. Dr. Holland covered every conceivable phase of the subject. Discussion was opened by Doctors G. W. Abersold and A. J. Goodwin. Dr. Holland was entertained while in Wheeling by Dr. E. L. Kaufman.

Fayette

The Fayette County Medical society held its regular monthly meeting in the Y. M. C.

A. building at Mt. Hope, Tuesday, January 11. The meeting was called to order by Dr. H. A. Walkup, president. Thirteen members of the society were present in spite of the bitter cold and snowy night. After an informal installation of officers for the incoming year the following papers were read:

"Lobar Pneumonia," by Dr. Milton C. Borman, Montgomery.

"Bronchial Pneumonia," by Dr. M. A. Moore, Kingston.

Dr. Walkup read a lengthy paper on Tularaemia, the so-called new American disease. The papers were discussed freely by the attending physicians.

Dr. S. W. Price, of Scarbro, talked to the society about the need of a tuberculosis sanatorium in southern West Virginia. The society went on record as being in favor of an institution of this kind and steps were taken to use every influence possible upon our legislators to work out means for an appropriation of some kind for the establishment of a sanatorium in southern West Virginia. G. A. SMITH, *Secretary.*

Parkersburg Academy

Officers of the Academy of Medicine of Parkersburg to serve in 1927 include:

H. A. Giltner, president; W. R. Goff, vice president; R. H. Paden, secretary-treasurer, re-elected. Delegates to annual meeting, W. R. Goff, C. L. Muhleman, T. L. Harris and the secretary; alternates, E. S. Goff, E. C. Hartman and S. M. Prunty. All of the officers and delegates reside in Parkersburg.

Brooke

The Brooke County Medical society has had during the last several months some very interesting and important meetings.

On November 18 the society was entertained by Dr. Nolte of Beech Bottom and a very interesting paper was given by Dr. Bernstein of Wellsburg on "The Relation of Fever to Disease." This paper was so well presented that the society unanimously asked that it be presented to the *State Journal* for publication.

On December 2 a tonsil clinic was held at the Emergency hospital of Dr. Abersold and the various methods of tonsillectomies were demonstrated. Dr. Booher demonstrated the Waring method of suction removal of the tonsils and this met with much approval. In all there were 18 tonsillectomies performed and with the demonstration by chart of the anatomy of the tonsil given by Dr. Abersold, this meeting stood out foremost as the best of the year.

On December 16, Dr. Harden of Wellsburg was the host and also presented the paper of the evening, "Important Men of Medical History." This was a most impressive meeting and included in the paper were the discoveries and advancements of such luminaries as Hippocrates, Laennec, Harvey, Hunter, Jenners, Lister and above all Pasteur. Medical history is certainly important to every practitioner and the various societies should include in their annual program one or more meetings along this line.

On January 6, Dr. Mabson of Wellsburg entertained the society and the paper was presented by Dr. Nolte on the "Treatment of Inguinal Hernias," citing Dr. Hammond's paper on Hernias presented at the Cleveland Assembly in many incidents. Hernias are most important from an industrial standpoint and are only traumatic in about 10 per cent of cases. They are slow, insidious in nature, arising mostly from some congenital defect. The writer has found no hernias developing from several thousand men working in industrial plants at Beech Bottom who were previously examined and found physically free from same on admission. This has held true for a period of five years, and makes the etiology of hernias caused by direct traumatism almost nil in this series.

NOTES

Dr. Abersold, president of the society, received the honor of fellowship in the American College of Surgeons. He recently gave us a very interesting report of the Montreal session and was high in praise of the Canadian hospitals especially the Royal Victoria which is the teaching hospital of McGill university and the Montreal General hospital.

Dr. J. P. McMullen is the proud father of a baby boy born at the Ohio Valley General hospital, Wheeling. The new medicus was named James Parks, Jr. —H.F.N.

STATE AND GENERAL NEWS NOTES

SIXTIETH ANNUAL MEETING PLANS WELL UNDER WAY

Tentative plans for the sixtieth annual meeting of the state association to be conducted in White Sulphur Springs June 21-23, inclusive, were formulated at a meeting of the scientific committee in Charleston December 27 which was presided over by the chairman, Doctor Harry G. Steele, of Bluefield. Those in attendance were Doctors C. N. Keesor of Wheeling, member of the committee; C. B. Wylie of Morgantown, chairman of the eye, ear, nose and throat section; D. M. Aikman of Wheeling, and John R. Shultz of Charleston, chairman and secretary of the section on surgery.

Definite word has been received from Dr. Morris Fishbein, editor of the *Journal of the American Medical Association* and noted writer on medical subjects, that he will attend the sessions. This will be Dr. Fishbein's first visit to the West Virginia State Medical association, he having cancelled an invitation to visit another state society so that he might be with West Virginia doctors.

Invitations are being extended to a number of the most prominent physicians and surgeons outside of the state but the scientific committee ratified the action of a year ago, deciding that the number of visitors should not total more than 25 to 30 per cent of the papers. Therefore it is urged that those having papers they wish to present will communicate at the earliest possible time with either Chairman Steele or the executive secretary. The committee is anxious to make this program well-balanced and one of the most attractive in history of the association.

The sixtieth meeting is to be known as the "Past Presidents' Meeting." On the first day a portion of time will be set aside in honor of those who have guided the association in the past. Dr. Henri P. Linsz, past president and retiring chairman of the council, will preside over this session and an effort is to be made to have all of the past presidents in attendance. Also, at the annual banquet a special table will be reserved for them.

In connection with the scientific committee session, the secretaries of component societies held their annual year-end session in which affairs of the year were reviewed and plans for making programs and social affairs more attractive in 1927 were discussed. Approximately 50 per cent of the secretaries attended. The next session will be at White Sulphur.

COLLEGE OF SURGEONS HOLDS DISTRICT MEETING

The annual section meeting of the American College of Surgeons for West Virginia, Virginia, Maryland and the District of Columbia was conducted January 17-18 in Washington with a large attendance, particularly from the Mountain State. One West Virginian appeared on the program, Dr. Frank LeMoyne Hupp of Wheeling, lecturing on "The Instruction of the Physician on the Present Status of the Cancer Problem."

Among other things, the session considered many questions relating to hospitals, the afternoon of the first day being given over to an address by Dr. Franklin H. Martin of Chicago on the "Progress of Hospital Standardization." In the round table conference which followed, the following questions were under consideration:

What should hospital by-laws, rules and regulations embrace?

What is meant by the terms "open" and "closed" as applied to hospitals?

What should be the basic considerations and requirements for extension of privileges to doctors to practice in a hospital, and for membership and appointment to the attending staff?

What is the ideal organization of the medical staff in an open hospital?

What are the essential requirements to insure good staff conferences?

What are the essential requirements to insure accurate and complete case records?

What are the minimum requirements for clinical laboratory and X-ray services as now recognized by the American College of Surgeons?

What measures should be taken to prevent incompetent and unnecessary surgery?

What should be a minimum standard for nursing in an approved hospital?

How can an adequate nursing service be assured to all types of patients?

What can a hospital do to make internships attractive?

How can we better provide for the care of the intermediate or middle class of patients?

What are the minimum standard requirements for an outpatient department?

How can a hospital develop and carry on follow-up and end results in relation to discharged patients?

What should be the relations existing among the chief executive officer and personnel of the hospital, the medical staff and the board of trustees?

What is the most successful method of preventing and handling complaints in a hospital?

What is the best method of preventing delinquency in the accounts of private patients?

URGES SUPPORT OF MEDICAL RESERVES

Urging support of the Medical Reserve corps in the fifth corps area and also the support of the profession in connection with the annual Citizens' Military Training camps, Colonel L. T. Hess of the medical corps, Fort Hayes, Columbus, O., has addressed two communications to *The Journal.* In the first, he says, in part:

"May I point out to you how the medical profession can lend much assistance to our country in furthering the cause of preparedness:

"First—In bringing to the attention of members of the community in which they practice the advantages of the Citizens' Military Training camps. Most people do not stop to realize what a wonderful public health opportunity is afforded by these camps with their adequate supervision, physical training and character building as a result of good food, regular hours medical supervision, exercise, etc. If the practicing physician would bear these things in mind and persuade the parents to send their young boys to these camps, they could perform no more patriotic service.

"Second—Candidates attending these camps are required to be examined physically and be protected against smallpox and typhoid fever, which we all must admit is a wise provision and benefits not only the individual but the public in general. The government has no funds to recompense physicians for doing this work—although it provides the necessary vaccine—therefore the medical profession is being called upon to perform this patriotic work and to furnish each candidate with a vaccination certificate and a duplicate for these headquarters.

"Third—In order that we may be prepared for any emergency similar to that of the World war the medical profession is being organized so that we can do our patriotic duty in such an event. There is enclosed herewith a brief synopsis of our requirements for your patriotic consideration."

Colonel Hess, in a circular of information, sets forth the following facts anent the reserve:

"The War Department has directed that the Fifth Corps Area, consisting of the states of Ohio, Indiana, Kentucky and West Virginia, furnish 2439 Medical Reserve Officers as its quota in the National Defense Plan.

"There are 120 units required to be organized and these consist of medical regiments; general, surgical, evacuation and station hospitals; hospital trains; surgical groups, and various zone of the interior installations.

"There are now 1079 physicians commissioned in the Reserve Corps in this corps area, leaving 1360 vacancies to be filled.

"Appointment in the Reserve Corps is made for a period of five years and any licensed physician is eligible for appointment.

"Those having had World war service are entitled to a commission one grade higher than held during the war; others can only be commissioned as first lieutenants and must be between the ages of 21 and 36 years.

"Reserve Officers cannot be ordered to active duty without their consent except in time of a national emergency expressly declared by Congress.

"Application blanks for appointment and further information may be obtained from the Surgeon, Fifth Corps Area, Columbus, O.

"If you are already an officer of the Medical Reserve Corps it is desired that you get in contact with physicians in your vicinity who are not in the Medical Reserve Corps, with a view of getting them to join.

"If you are not a commissioned officer in the Medical Reserve Corps we want you to join if you come within the provisions as set forth in paragraph 5 of this circular."

PRINCIPLES APPLYING TO HOSPITAL "LAB" SERVICE"

Probably throughout the country no two hospitals have met the problem of the organization of their pathological service in the same manner, and it is well that there should be some diversity. At the same time, the broad lines of the problem facing all hospitals in this respect are the same, and certain general rules can be laid down.

In the first place as to the choice of the pathologist: it is very necessary that he should have had special training for his work, and this special training is best obtained in a junior post in the laboratories of one of the great teaching hospitals. The time has now passed when a practitioner without special training can be regarded as an eligible candidate for the post of pathologist in any general hospital.

The main laboratory should be large and well lighted. The floor, if possible, should be of cement with a covering of cork linoleum; if of wood, it should be kept well polished. A north light for microscopic purposes is very desirable. South is the most undesirable aspect of all, and should be avoided if at all possible. Cupboards cannot be too plentiful. Gas, electricity, and water should be available in lavish abundance, and nowhere should the pipes or wires conveying these be sunk in the walls. The plumbing, including all the drains from the sinks, should be as open as possible. The preparation room should contain a large sink with hot and cold water and as lavish a supply of gas and electricity as the main laboratory.

It is advisable that the postmortem room should be as near to the laboratory as possible, but it is not nearly so important that it should be near the laboratory as that the latter should be within easy reach of the wards, and in most cases, if the laboratory is to be within easy reach of the wards, it will be impossible to find a place for the postmortem room near it. The building near which the postmortem room must obviously be situated and with which it should share the same roof, is the mortuary.

The last, but by no means the least, important of the accessories of the pathological department is the animal house. Where the laboratory is under the same roof as the wards it will obviously be impossible to have the animal house very near, but it is essential that it be as near as possible; otherwise much time is lost fetching and taking animals, and the assistant is further liable to spend rather too much of his time in the company of the guinea pigs.

Cooperation between the resident staff and the pathologist is even more essential for the efficient working of the department and the hospital of which it forms a part, and by dint of a certain amount of bullying is not impossible of attainment. No system can make up for lack of a desire on the part of the clinical staff to use the laboratory, or lack of knowledge of what the laboartory can do for them. There are two or three cardinal points which must be observed. Special forms must be provided to accompany all specimens or demands for work in the wards sent to the laboratory. A second form, preferably of a distinctive color, must be provided for the laboratory report, and the attachment of this to the patient's record sheets as soon as it is received in the ward must be rigorously enforced. Thirdly, a day book must be kept in the laboratory in which copies of all reports sent to the wards are to be entered. So far as the hospital itself is concerned, it is the work done for the wards which must constitute the justification for the existence of the laboratory. The laboratory, however,

will be open to the receipt of work from the outside and this private work should form a source of income to pathologists and laboratory alike. An efficient pathological service is an essential to the economy of a hospital. Pathology is not aucillary to medicine; it is medicine, and a hospital without a pathological service is incapable of proper function.—*Hospital Management.*

COUNCIL FINDS STATE MEMBERSHIP GROWING

The annual year-end meeting of the council was held in Charleston, December 28, in association offices, 303 Professional building. Those present included Doctors Henri P. Linsz, chairman; James R. Bloss, president; W. E. Vest, C. H. Hall, J. E. Rader, Chester R. Ogden, president-elect; Harry G. Steele, John Folk, C. A. Ray, I. D. Cole, councillor-elect; C. H. Maxwell, J. Howard Anderson, R. H. Dunn, and Mr. Sterrett O. Neale, executive secretary. The only absentee was Dr. Charles G. Morgan, who was ill with an injured knee at his home in Moundsville.

First in the order of business was a tentative report of association affairs by Mr. Neale. He pointed out that the membership reports showed a gain of 35 over 1925, being one of the largest enrollments in history of the association. Largest gains were shown in the third and sixth councillor districts, the third with 109 in 1925 and 127 in 1926; and the sixth with 210 in 1925 and 234 in 1926. The total membership in 1925 was 1,009 as compared with 1,044 in 1926, with several secretaries having final reports yet to make. Mr. Neale anticipated that the total number of members for the year would be approximately 1,055, or a loss of but nine members as compared with 1924 when state dues were but $5. Each of the societies, he said, had applications pending indicating an even larger membership in 1927.

The West Virginia Medical Journal was virtually on a self-supporting basis, despite the increase in size and appearance of the publication, he said. The bid of the *Mutual Printing Company,* accepted by the publication committee, was approved. The council voted that a creditable record had been shown for the year.

A final report of the outgoing medical defense committee then was filed. Three suits were pending, it was said, but in neither had a declaration been filed by the complainant. Two cases were successfully defended during the year, the total payments for the year being $300 in attorneys' fees in two suits.

The council instructed the executive secretary to write to the secretary of the Marshall County society that a member's dues must be accepted unless definite charges have been filed. The proposition of the Eastern Panhandle society to have a dual-membership, with one group paying county but no state dues and the other group paying both, was voted down unanimously. It was the consensus of opinion of the council that "this is no *cheap* organization."

The report of the association's special committee on finances, Doctors C. A. Ray and R. H. Dunn, was not complete as books for the year could not be closed until after January 10. However, it was indicated that a substantial sum would be recovered from the bankruptcy proceedings of Hugh G. Nicholson.

Committees appointed included:

Bankruptcy Proceedings—Ray, chairman; Dunn and Steele.

Secretary's Report—Vest, chairman; Hall and Anderson.

Audit—Maxwell, chairman; Cole and Folk.

Acting upon the resignation of Dr. H. R. Johnson as chairman of the medical defense committee, the council elected R. H. Dunn of South Charleston to this post. The other members of the committee are Doctors Cole and Morgan.

John V. Ray, general counsel for the association, then gave an extensive verbal report on the status of the Nicholson bankruptcy proceedings, citing precautions that have been taken to protect association finances. He said that a $25,000 life insurance policy now is being carried by the

association on Dr. Nicholson's life. His report was accepted on motion of Dr. Bloss. Mr. Ray was retained as general counsel for the ensuing year.

Dr. Steele moved to change the date of the year-end meeting from the last Tuesday in December to the second Tuesday in January and this motion prevailed.

The council then considered the secretary's recommendation that the association investigate the feasibility of handling its own malpractice protection, including the payment of all costs and damages. Dr. Bloss moved that a committee be chosen to delve into this matter and report at the sixtieth annual meeting in White Sulphur Springs in June. This was seconded by Dr. Anderson and the committee named includes Dr. J. Howard Anderson, chairman; W. E. Vest, I. D. Cole, President-elect Ogden and the executive secretary.

It was decided that hereafter the hospital committee shall be chosen so that the three members shall serve overlapping terms of three years, one member to be appointed by the president each year.

Dr. Steele offered a resolution to make the election of officers the final order of business on the last day of the annual convention. He stated that the election conflicted with the scientific program on the third day. The matter was referred to a committee composed of Doctors Steele, Vest and Anderson.

Dr. James Whann McSherry, born in 1833, and believed to be the oldest member in good standing in the association, was elected to honorary membership by unanimous vote. Action was taken upon motion of Dr. Bloss.

Upon motion of Dr. Ray, it was recommended that county societies pay the dues of any member who through want or adversities was unable to pay his county and state dues.

Upon motion of Dr. Vest, seconded by Dr. Ray, the council voted unanimously that a treasurer of the association should not succeed himself more than five terms simultaneously.

Bonds of $25,000 for the treasurer and $2,000 for the executive secretary, executed through the United States Fidelity and Guaranty Company were approved and premiums ordered paid.

The council, upon motion of Dr. Vest, unanimously approved the proposal to locate a site and erect a tuberculosis sanatorium in southern West Virginia.

The council then, before adjournment, paid a glowing tribute to the retiring chairman, Henri P. Linsz of Wheeling, who is going out of office after continually serving the association in an official capacity since 1906.

PASSES BAD CHECK ON MONTGOMERY DOCTOR

A warning to professional men to be on guard against a corpulent check artist has been issued by Sterrett O. Neale, executive secretary, after a member of the association in the coal fields complained of being victimized to the extent of $25. Facts pertaining to the case have been forwarded to John Britton, chief of police of Charleston, and are being investigated.

Giving the name of "S. J. Hilton," and claiming to be a lumber mill operator from Anderson, Ind., the man visited a doctor in Montgomery with the statement that another doctor in a neighboring town had sent him in to have an x-ray examination of his arm. He said the doctor would be in three days later to look at the picture.

"Hilton" then drew a check for $25 on an Anderson, Ind., bank and the Montgomery doctor cashed it, giving "Hilton" the change. The check was returned by the bank with a notation that several checks had reached there from this vicinity.

"Hilton" is described as a man weighing 260 pounds, florid complexion, five feet, seven inches tall, about 45 years old. He had a mustache. He walked poorly, rather a shuffle. He claimed to be a Shriner but the Montgomery doctor did not ask to see his membership card.

Police in other cities in southern West Virginia are being asked to watch for this man.

VETERANS ADVISED TO CONVERT INSURANCE

Members of the profession in West Virginia who have been carrying war risk insurance will be interested in the proclamation January 16 of President Coolidge reminding all war veterans that it will be impossible for them to convert or reinstate their war risk insurance after July 2, 1927. Under the law, the proclamation explains, war risk insurance may be converted into any one of the seven forms of standard insurance, offered by the government, on or before July 2, 1927. Or a veteran in ordinary health can reinstate his insurance by paying two monthly premiums.

In part, the proclamation says:

"Statutory provision was made for the continuance of this war risk insurance after the termination of the war, and its conversion within a limited time into such form or forms of insurance, usually issued by life insurance companies, as the insured might request. Many veterans do not seem to have had knowledge of this continuing privilege, and for one reason or another have permitted their war risk insurance to lapse. Under the terms provided for the reestablishment of lapsed insurance, normal health conditions will permit reinstatement upon the payment of two monthly premiums; and for those whose service disabilities render them otherwise not insurable, and who are not permanently and totally disabled, provision is made for reinstatement upon the payment of premiums and interest for the period of lapse. Even these payments may be temporarily waived for those whose resources do not permit immediate compliance."

It is possible that some of the members who served in the medical corps have permitted their insurance to lapse. If so, here is an opportunity to have it renewed.

VALUE OF PERIODIC HEALTH EXAMINATIONS

The value of periodic health examinations and how the public gradually is expecting the family doctor and the general practitioner to assist in keeping the public well, were stressed by Surgeon General Cumming in an address before a joint meeting of the Chicago Medical Society and the Chicago Dental Society recently. In reporting the address, the *United States Daily* quotes Dr. Cumming, in part, as follows:

"One general result of health educational publicity has been to stimulate the public to expect doctors, dentists, health officers and sanitarians to advise them how to keep well. This situation is one that has great potential value for the good of each community, if those who have the responsibility and knowledge will capitalize their opportunities and assume leadership in promoting health education and preventive medicine.

"The idea of an annual physical examination which has been so generally discussed and advocated during the past few years is the outstanding avenue of approach to this question of health education. If every person would go at least once each year to his own doctor, and more frequently to his dentist, for an examination, the occasion would offer a favorable opportunity for advice on health matters. Not only would physical defects and the incipient stages of disease be discovered, if present, but those being examined can be advised to form proper health habits, and to secure protection against certain diseases by immunization.

Examination Is Focal Point.

"When the idea is fully developed, the annual physical examination will be the focal point around which doctors, dentists, health officers, sanitarians, unofficial agencies, and the leaders of each community can rally to develop the promotion of good health and prosperity.

"To illustrate the possibilities of such a development in medicine I can do no better than to quote from a recent statement by the president of a great university who said that 'under adequate medical statesmanship, the men in private practice of medicine will deliberately set out to educate their clientele to look to physicians

primarily for the care of health, rather than for the cure of disease.' "

CANDIDATES TO BE TESTED FOR PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the regular corps of the public health service will be held at Washington, D. C., Chicago, New Orleans and San Francisco, on February 7, it has just been announced orally at the offices of the public health service.

Candidates for these examinations, it was explained, must be not less than 23 nor more than 32 years old, and they must have been graduated in medicine at some reputable medical college and have had one year's hospital experience. They must pass oral, written and clinical tests before a board of medical officers and undergo physical examinations.

Successful candidates will be recommended for appointment by the president, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, United States Public Health Service, Washington, D. C.

D. C. MEDICAL BOARD

Regulation of the practice of medicine in the District of Columbia through creation of a board of medical education and licensure, to consist of six legally qualified practitioners, is proposed in a bill introduced in the House by Representative Rathbone (Rep.) of Illinois, according to the *United States Daily*.

URBAN DEATH RATE

The death rate in the urban registration area of the United States in 1926 was 13.2 per 1,000, according to the bureau of the census. The area covers a population of approximately 30,000,000. The deaths under one year old were 45,766, or an infant mortality of 71 per 1,000 population, which is equal to that of 1925. Apparently Sheppard-Towner made little progress within the twelve months.

SHEPPARD-TOWNER ACT TO BE REPEALED IN '30

The *United States Daily*, semi-official publication of Washington, in its issue of January 15, has the following to say relating to the Sheppard-Towner act:

"The Senate has passed House Bill No. 7555, to authorize for the fiscal years 1928 and 1929 appropriations to carry out the provisions of the Sheppard-Towner act for the promotion of the welfare and hygiene of maternity and infancy. The bill was passed after an amendment had been accepted, providing for repeal of the act on June 30, 1929.

"Previously, the Senate rejected a committee amendment which would have limited the extension period to one year."

CONGRESS ON MEDICAL EDUCATION IS CALLED

The annual congress on medical education, medical licensure and hospitals will open February 14 in the Palmer House, State and Monroe streets, Chicago, and continue three days. An attractive program has been arranged. On the third day, the Federation of State Medical Boards will have charge of the sessions.

INVESTIGATE

Following up the "Fresh Florida Oranges" fraud of which THE JOURNAL warned members in January, the Toledo Better Business Bureau gives some good advice: "On all such matters, BEFORE YOU INVEST—INVESTIGATE!"

CHILD MARRIAGE BILL

There is pending in Pennsylvania a child marriage bill which would advance the age limit for the marriageable age from 14 for boys and 12 for girls to 16 years for both sexes.

3,000,000 DEAF CHILDREN

There are 3,000,000 school children with defective hearing in the United States, according to an announcement of the department of labor. The estimate for West Virginia is not given.

DEATHS

A. N. Frame

Doctor A. N. Frame of Parkersburg, honorary member of the state association, died at his home January 8. He was born in 1852, graduated from Indiana Medical college, Indianapolis, in 1878 and was licensed to practice in West Virginia in 1881. He was elected to membership in the state association soon afterwards and always maintained an active interest in the affairs of organized medicine. He was widely known among members of the profession, particularly in the Ohio Valley.

James M. Lovett

Doctor James M. Lovett, 61 years old, died in Huntington December 25, 1926, after an illness of two years. He was born in Freemansburg, Lewis county, educated in the public schools and attended the University of Maryland where he received his degree in 1892. He then located at Rock Cave, Upshur county, practicing there until 1906, when he located in Huntington. Dr. Lovett was one of the first to take up x-ray therapy and diagnosis in Huntington and was well known to the profession.

W. E. Smith

Dr. W. E. Smith, physician for the New River and Pocahontas Coal Company at Minden, Fayette county, died suddenly Monday, January 24, at noon. Dr. Smith had been in bad health since last winter, following an attack of influenza which affected his heart. Dr. Smith had served the New River and Pocahontas company as physician for twenty-three years. He was a native of Gallia county, Ohio, and fifty-three years of age, a graduate of the Ohio Medical College, an active member of the county medical society, and was held in the highest esteem by members of his profession. He had a large circle of friends to whom his death comes as a great shock. He is survived by his wife who was a Miss Dunham of Canada, at one time head nurse at the McKendree hospital. The interment was held at Oak Hill, Wednesday, January 27.

OTHER EDITORS

Adolescent Albuminuria

The occurrence of albuminuria in apparently healthy boys has frequently been a source of worry to parents and of mystification to the family physician. While it has been generally believed that the phenomenon was not one of serious import, very little has been known as to its causation or prognosis. The observations of H. H. Bashford (*The Lancet*—December 25, 1926) on a number of cases of this condition followed for a considerable period of years are therefore of much interest. This author reports that in a consecutive series of 1000 boys of 14 years of age examined by the Headquarters Medical Department of the British General Post Office between July, 1924, and April, 1926, 58 were found to have albuminuria. In a second group of 500 males between the ages of 14 and 30, albuminuria, without any apparent organic disease, was present in 41.

Thirty cases of albuminuria detected in boys examined prior to 1909 were examined by Bashford in 1909, 7 to 14 years after the discovery of albuminuria. In six of the 30, albuminuria was still present. Twenty-four of these were re-examined by him again in 1926, six having left the postal service. Although only one of the 24 showed a persistence of the condition, Bashford believes that more frequent and careful examination would have shown it to be present in other cases as well. In his conclusions, he states that in a considerable number of instances

the condition persists for many years, if not for life, but that its presence is consistent with a perfectly normal life of physical efficiency.

Of the six cases who had left the postal service, one had died of acute nephritis. Of the others, two were untraced, and three left the service on account of some physical disability in no way connected with the kidneys. In 40 of the 43 cases of the first series who were examined repeatedly, and in 30 of the 41 cases of the second series, albumin was found to be absent from the morning or after-rest specimens.

Bashford concludes, therefore, that in the great majority of cases of true adolescent albuminuria, the after-rest specimen is usually free from albumin. As to the causation of the albuminuria, his researches yield only negative evidence. The condition, he states, is "not definitely associated with any particular type of youth or man, with a so-called 'nervous' disposition with lordosis, oxaluria, or a history of scarlet fever.—*Boston Medical and Surgical Journal.*

The Need of Neuropsychiatrists

While it cannot be denied that many think medicine is overspecialized, it must be granted that neuropsychiatry, although classed as a specialty, involves in its practice more principles of the art and science of medicine than any other of the specialties. To study a diseased body free from mental complications is comparatively easy in comparison to the task of studying a diseased condition complicated by these factors. Yet how many physical disorders are totally free from mental reactions? It remains for the neuropsychiatrist to interpret these reactions from the standpoint of cause, effect and cure.

Whether or not this exaction made on the novice is responsible, or whether the objection to following the specialty is purely personal, environmental, monetary, or due to a lack of enlightenment, is not known. Possibly more than one factor sponsors the objection. As a result, there are many openings for the well-trained neuropsychiatrist in the field today—a field in which the individual may follow psychiatry *per se,* in practice or in institutions, in community organizations, such as health officer, court officer, medicolegal expert, educator, or administrator, or devote himself purely to the scientific side of physiopathology and physiochemistry.

No doubt there are greater and more fundamental reasons. It is only within recent years that psychiatry has been established in our medical schools, although Dr. Charles K. Mills forty years ago pleaded for such a course of instruction. Second, our State Board of Medical Education and Licensure makes no requirements of the candidate so far as psychiatry is concerned. Third, the great mental hospitals with all their clinical material have never been completely utilized by our colleges for case studies or intern training; neither has the State Board insisted on this training. Yet all of this despite the facts that one out of every ten school children needs neuropsychiatry, 31 per cent of our criminals need neuropsychiatry rather than penal care, and billions of dollars are spent annually for caring for wrecked mental and nervous cases, aside from the untold suffering and sorrow from this cause.

Possibly a knowledge of these facts will tend to ameliorate the conditions. Of course one hears the objection to intern training. The answer to this objection is, regardless of which field the physician may elect, subsequently his psychiatric training will never be amiss, for as one authority has said, the best type of medicine practiced today is that practiced by the man who is able to view his patient from the neuropsychiatric angle.

These positions should be filled. They are not only remunerative, averaging more annually than the 3,000-dollar average established by Mayo for physicians as a whole, but give to the individual a greater public contact with less physical strain and hardship and more hours for scientific study and research than any other branch of medicine. Aside from these, there is no greater challenge for real red-blooded men today than that of neuropsychiatry; there is no greater appeal for scientific service than that demanded by the mentally sick; and surely there is no greater "human touch that counts" like that first touch made with a mind diseased.—*Atlantic Medical Monthly.*

Vincent's Angina or Trench Mouth

Doctors Heymann, Hume and Thomas, the Committee on Dental Hygiene of the Jefferson County Dental Society, have called our attention to the widespread epidemic of Vincent's Angina or Trench Mouth, an acute infectious inflammation of the mucous membrane of the mouth and throat.

It is recognized by a grayish white membrane covering bleeding ulcers, located on the oral mucous membrane or gum tissue. It usually begins around or between the teeth. When this grayish-white membrane is removed by a tonsil swabbing, a raw, bleeding surface is exposed. A peculiar foul odor is characteristic of the disease and when one has become acquainted with this odor it is a powerful diagnostic aid. Quite frequently the ulcers appear on the inner surface of the cheek, soft palate, throat, and it is especially likely to appear on the tonsils. There may or may not be a rise in temperature. There are frequently mild and sometimes quite severe chills and headaches with general malaise and excessive flow of saliva, sometimes stained with blood.

This is a highly infectious disease, easily transmitted by kissing, use of common towels, drinking cups, knives and forks; and, in schools, by the common use of lead or slate pencils and by the common eating of fruit or other ingredients of the lunch.

The committee recommends in the treatment of Vincent's Angina the daily application, carefully and thoroughly, to the ulcerated surface of 5 per cent solution of Chromic Acid and that the following prescription be used by the patient:

Wine of Ipecac	Dr. VI
Fowler's Solution	Dr. X
Glycerine	Dr. X
Hydrogen Peroxide	q.s.ad.Oz.XVI

M. Sig.: Use as a mouth wash every two hours.

Patients should, of course, be cautioned not to swallow any of this solution.

If the temperature rises to 101 degrees or over, or if glandular involvement is present, intravenous injections of neosalvarsan are indicated.

After the ulcers have healed and the inflammation has subsided, all irritants such as tartar, roots of teeth and dead teeth should be removed and the teeth thoroughly cleansed and polished.

Hundreds of cases of this disease have been reported in various sections of the state. Many of them have not been recognized because the physician failed to make a careful examination and, especially, failed to look for the characteristic odor and ulcers.

Our dental friends are entitled to our cooperation in helping get rid of this serious aftermath of the war. — *Kentucky Medical Journal.*

The Common Cold

At this time of the year when coldness, dampness, windiness and sudden changes are the chief features of the weather, the perennial problem of the common cold is most pressing. It has reached a point where it is being regarded more seriously than ever before by both practitioners and public health workers. A few years ago the subject was considered too lowly to write about, but the frequent discussions which have appeared more recently in current medical literature indicate that in the prevention of the common cold lies the keynote of the prevention of many of the diseases which lead the list in mortality tables.

Those who have studied the common cold believe that it is conservative to assume that 75 per cent of all pneumonias are secondary to colds. Then it requires no argument to understand that the troublesome sinus infections upon which much attention has been concentrated in recent years, are invariably traceable to a cold. Moreover the first symptoms of cardiac decompensation, chronic nephritis, diabetes, arthritis and many other diseases often appear in the wake of a cold.

In addition to the public health phase of the problem, employers and insurance companies are beginning to realize the economic loss caused by the widespread prevalence of colds. Statistics have been compiled to indicate that this amounts to $1,500,000,000 annually.

It is obvious that any progress towards at least a partial solution of this problem is in prevention. The treatment seems to be secondary. Many suggestions have come forth as to the best means of preventing colds. The discussion has been interesting and is timely. Much of value has come from it.—*International Medical Digest.*

A Reply

The October number of the *Chicago Medical Recorder* presents an editorial entitled "Professional Ethics," commenting on an editorial printed in a recent issue of the *Chicago Journal of Commerce.* The substance of the latter editorial is to the effect that when a poor woman of Dayton, Ohio, found herself with a very sick child, none of the Dayton doctors who were called were willing to attend the child unless their fee was assured in advance; that the child died, and the coroner made the statement that, had the child had prompt and efficient medical attendance, it would, in all probability, have lived, the coroner stating that it was inconceivable that Christian men, whether doctors or laymen, could be guilty of such neglect.

The standing of the *Chicago Medical Recorder* and the *Chicago Journal of Commerce* is such that statements coming from them are to be given heed; but in such an instance, we should need to be shown: first, that the facts were as alleged; second, that if they were so proved, that the physicians who were so unmindful of their professional obligations were truly representative members of the profession. This, because such want of humanity is not characteristic of real physicians, and anybody who asserts the contrary libels our profession.

We have blacklegs and sordid practitioners *amongst* us, but they are not *of* us. And any so-called physician, really guilty of such practices as those alleged, should be drummed out of our camp with no more consideration or pity than would be accorded a soldier who befouled his uniform by treachery to his fellows and to his corps.

Ethics? We refuse to stultify ourselves or besmirch our pages with an attempt to defend our code against such irresponsible questioning of it. A man's a man, and the study of medicine and the practice of the art do not tend to lessen his manhood or his humanity. But it would be too much to expect that our finest principles and the examples of our finest practices could raise all blacklegs and all natural-born mercenaries to the high estate of the average practitioner of medicine.—*Wisconsin Medical Journal.*

U. S. SUPREME COURT UPHOLDS AMERICAN DRUGS

A decision of the highest importance to every physician, pharmacist, drug manufacturer and, in fact, every user of drugs in the United States was rendered by the Supreme Court of the United States on October 11, 1926, when this highest tribunal of the nation declared that the Chemical Foundation has been acting legally and properly in the purchase of the foreign drug and chemical patents during the war, and licensing American manufacturers to produce these essential substances in this country.

The sale of the German patents to the Chemical Foundation took place during President Wilson's administration and had, without doubt, a distinct influence upon the outcome of the war, because this transfer permitted American concerns to begin at once the production of various drugs and chemicals which had, theretofore, been made only in Germany, and whose importation ceased with our entry into the war.

President Harding, apparently laboring under some misapprehension as to the purposes and functions of the Chemical Foundation directed that suit be brought by the Government to set aside the sale of these patents to the Foundation.

The case was first tried in the Federal District Court of Wilmington, Del., and resulted, after weeks of evidence taking, in a finding against the Government on all points.

The case was appealed to the circuit court, which upheld the decision of the district court in every particular.

A final appeal carried the question to the Supreme Court of the United States, where evidence was heard more than a year ago. The long delay in rendering a decision has

afforded time for mature consideration. The court has decided unanimously that the sale to the Chemical Foundation was valid and legal and that the Foundation has made no improper use of the powers which it thus acquired.

This decision is a momentous one for everyone who has anything to do with drugs and chemicals in any way whatever.

To the physician it means that he will have a steady and regular supply of reliable drugs of American manufacturers, which can never again be upset or cut off by the vicissitudes of war. The same considerations apply tc pharmacists. Among the vitally necessary drugs affected may be mentioned the arsphenamines, cinchophen, barbital, the flavines, procaine and a host of others.

To the drug manufacturer, who has invested thousands of dollars in apparatus for the manufacture of drugs and chemicals under the Foundation's licenses, it means relief from a certain degree of anxiety (though the outcome of the case could scarcely have been in doubt) and a tremendous inspiration to further investigations looking to the production of more and better drugs and chemicals for America.

To the nation at large ,it means that reliable medicines will continue to be sold at reasonable prices; and, more or less indirectly, that the dye industry of America which is now in a flourishing condition, thanks to the Chemical Foundation, will be available for government uses should we become involved in another war.

Nor are medicine and pharmacy the only lines of endeavor affected by this momentous decision. The steel and packing industry and many others will be vastly benefited by the freedom of chemical investigation and activity which is now assured them.

A SUGGESTION

The July 24 issue of the *Weekly Bulletin* of the New York City Department of Health contains the following suggestion to physicians: Why not make it a practice to inquire of every patient with children whether they are immunized against diphtheria? Such an inquiry can not be objected to and ought to be interpreted as praiseworthy interest on the part of the physician in the physical welfare and safety of his patients' children. Should the reply be that the children have not been immunized, a very valuable opportunity for doing a most necessary educational work presents itself. It requires only a very few minutes' time to explain to the attentive patient the virtues and values of diphtheria immunization, and this education of the patient by his physician is of the highest value.

COLLEGE OF PHYSICIANS TO MEET IN CLEVELAND

Announcement is made that the American College of Physicians will hold its eleventh annual clinical session in Cleveland, O., February 21-25, 1927. Dr. Alfred Stengel of Philadelphia is president of the college and Dr. John Phillips of Cleveland is the chairman of the program committee. The program will be of unusual interest to internists, (including neurologists, pediatrists, roentgenologists, pathologists, dermatologists, psychiatrists and others engaged in the field of internal medicine). The Cleveland hospitals and the Western Reserve University will cooperate with the college in the presentation of the program. These programs constitute each year a post-graduate week on internal medicine of outstanding merit.

During the mornings, there will be clinics and demonstrations at the various hospitals and in the laboratories of the Western Reserve University; during the afternoons, papers on various medical topics will be delivered by local members of the profession and by members of the college from other parts of the United States and Canada; during the evenings there will be formal addresses by distinguished guests, American or foreign, and by the president or other representatives of the college.

An invitation has been extended by the college to all qualified physicians and laboratory workers to attend the Cleveland clinical session. An attendance in excess of fifteen hundred is anticipated.

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"PROBLEM AND PRACTICE IN BILIARY SURGERY"*

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Philadelphia, Pa.

THE PROBLEMS of biliary surgery are functional and technical. The functional problems which indeed offer solution for many of the technical problems are bound up with the physiology of the liver. As clinicians we eagerly turn to the laboratories, now so busily engaged in interpreting hepatic function, as we seek a sound physiologic basis upon which to develop a rational diagnosis and treatment in biliary disease. Since John Stough Bobbs did the first successful cholecystostomy nearly sixty years ago, no decade has been marked by greater activity for the solution of hepatic function than the present one. But technical application has often run away from science. Experimental results are rushed from laboratory without confirmation or calm philosophy; yet poor defective guidance may be better than none at all. It is better to work out scientific errors than to be content with pure empiricisms. What does the liver do? Many of us were taught that it stored glycogen and excreted bile, but had very hazy ideas as to what this meant in the economy. Now our concepts, however incomplete, are larger and much more illuminating.

Our food intake is never precisely adjusted to our needs. While the tissue demands are continuous, our meals are taken at intervals and our diet is not balanced to the immediate requirements of the body, but has daily excesses or deficiencies. Heavy exercise or fever may burn much carbohydrate at times when food is not eaten or absorbed. Protein often is freely taken when it is not required for tissue replacement, need for lecithin may occur with a diet poor in fat. Hemoglobin waste occurs without replenishment from food ingested. It is the liver that is the great

* Read before the Central Tri-State Medical Society, Huntington, W. Va., September 9, 1926.

seat of supply, conversion, storage, detoxication and elimination of food poducts. Remove the liver and the fires of life quickly burn out, the body becomes uremic, convulsed, or eclamptic from its poisonous proteins; dulled, acid, and insensitive from its poisonous hydrocarbons; shocked because absorbed poisons are not conjugated; stained by excess of pigment; and hemorrhagic from failure of calcium and fibrinogen to produce coagulation of blood.

With the liver removed, death follows quickly unless, as Mann has shown, glucose is supplied to the blood. Without the associated combustion of glucose the fats do not burn down completely to carbon dioxide and water, but beta-oxybutyric acid, diacetic acid, and acetone are formed with the production of acidosis, stupor and coma. Following the removal of the liver there is failure to reduce the amino acids to urea and the intermediate product ammonia is eliminated in excess, the blood urea being reduced. The condition resembles that found in uremia and eclampsia, and convulsions occur, especially if the animal is given a meat diet. Without the action of the liver, aromatic, split or toxic proteins produced by bacterial decomposition in the digestive tract and absorbed, are not conjugated with sulphuric or glycuronic acid into indoxyl sulphate, ethereal sulphates, and the like, and rendered harmless; but are found as Indol, Indoxyl, Skatol, Tyrosine, Paracresol or other poisonous substances.

The liver reminds me of the old-fashioned wood burning stove with which bacon (fat) was fried, cakes (carbonhydrate) were baked, and meat (proteid) was roasted. For successful operation a continuous supply of wood (carbonhydrate) was required which had to be dried and cut in suitable lengths for efficient use. The speed with which the wood was burned was regulated by a damper. Scraps of fat, meat, bones, (calcium and salts) and the like were easily consumed if there was sufficient wood burning, but while fat and meat and salts might burn with little wood, they consumed slowly and with much offensive smoke and odor. Applying this crude comparison to the body, the fuel, glucose, must be continuously supplied to enable the liver to handle the fats, proteids and salts. The fuel is cut or converted into glycogen for storage before use, the rate of combustion is regulated by a damper, insulin. Fats, proteids, even toxic proteids and salts, burn well with sufficient glucose, but burn poorly and form poisons if the carbohydrate supply is insufficient. For every form of hepatic deficiency it is of first importance that the supply of glucose be maintained.

The known functions of the liver include: (1), Conversion and storage of: (a) sugar—glucose into glycogen, (b) fats—desaturated—lecithin, possibly formed, (c) proteins—amino acids into ammonia and urea, (d) pigment—waste hemoglobin, converted in part into bilirubin (animal cholorophyl) ; 2, metabolism of (a) fibrinogen, antithrombin and calcium (blood clotting, bone hardening) (b) cholesterol—insulator cell builder—deesterized, (c) bile salts—eliminants, digestants; 3, destruction of (a) bacteria, (b) toxic proteids from intestinal putrification conjugated with sulphuric or glycuronic acid to harmless ethereal sulphates, etc., (c) alkaloids—strychnine, atropine, nicotine, etc.; 4, sequestration of mineral poisons, arsenic, mercury, phosphorus, etc.; 5, elimination of bile.

The normal liver has a capacity greatly in excess of its needs and besides, has a marked ability to regenerate. Four-fifths of a dog's liver may be removed without evidence of metabolic disturbance; and nineteen-twentieths of the intrahepatic biliary ducts obliterated without the production of jaundice. The enormous excess capacity of the liver explains in part the failure of various tests employed, to determine impairment of liver function.

In the liver glucose is converted and stored as glycogen, to be reconverted into glucose to meet the need of the tissues. Proteins received as amino acids are stored, or if in excess, broken up into ammonia and urea for elimination by the kidneys.

In most animals, except the Dalmatian coach dog and man, uric acid is converted by the liver probably into allantoin. Fats from the food are stored, desaturated for better utilization, converted in part into lecithin and possibly cholesterol fat, fat from outlying fat

deposits is recalled to the liver as needed for conversion and utilization. The monatomic alcohol, cholesterol, resistant to bacterial decomposition and digestion, used in the body to encase red blood cells, for the frame work of other cells, for the structure of the nervous system, to protect the skin in sebum, is constantly present in blood serum and is eliminated by the liver through the bile to be reabsorbed from the intestines. Bilirubin physiologically and chemically akin to the chlorophyl of plants is formed from the hemoglobin of worn out and destroyed red blood cells, is stored and the surplus eliminated with the bile to be reabsorbed from the intestines, even when bacteria break down the bilirubin in the intestines into urobilin the liver removes it from the portal blood and reconverts it into bilirubin to be re-used for hemoglobin or other body pigment.

Whipple contends that cooked liver is the best hematinic; and Minot and Murphy have recently reported a remarkable improvement in 45 cases of pernicious anemia following the daily feeding of large quantities of cooked liver.

Dogs with a biliary fistula preventing the entrance of bile into the intestine, sicken and die. In humans the constant calcium loss may be followed by softening of bones and other changes. Whipple and Hooper found that the condition was relieved by feeding cooked liver, but not by the administration of bile. These observations deserve further trial in clinical practice.

Fibrinogen, essential for the clotting of blood, and anti-thrombin which limits the activity of fibrinogen are developed by the liver. Calcium is eliminated with the bile in combination with biliverdin. In jaundice calcium metabolism and the clotting of blood is inhibited from the combination of biliverdin with the blood calcium. Intravenous injections of calcium chloride as suggested by Watson, have proved of value in preparing patients with jaundice for operation. If bile salts do not enter the intestine, the calcium present may combine with the fatty acids forming insoluble calcium soap, thus preventing the absorption of fat.

Bacteria absorbed from the gastro-intestinal tract are killed and disintegrated in the liver, the waste products being eliminated with the bile as shown many years ago by Adami.

Nicotine, strychnine, and other alkaloids are destroyed in the liver; arsenic, mercury and phosphorus held; anesthetics and narcotics combine with the lipoids in the liver. The blood lipoids being increased during ether narcosis, and after the narcosis by chloroform or morphine. Quantities of poison which the healthy liver is able to store or detoxicate may be fatal when the liver is diseased or degenerated; thus, Salvarsan injections are very dangerous and may be fatal in syphilitic or malignant disease of the liver. In carcinoma with degeneration of the liver the routine use of morphine to relieve pain is followed by very rapid failure, stupor and often death within a few days. Chloroform, ether and morphine are harmful when given to patients with advanced hepatic disease. Hyoscine, atropine, strychnine and other poisonous alkaloids, normally destroyed in the liver should evidently be avoided or used with great caution in advanced diseases of the organ. Tests necessitating starvation, or the injection of dyes or other possible poisons should be avoided immediately before operation.

The bile carries pigment, bile salts, cholesterin and water from the liver. In the gall bladder the bile is concentrated to one-tenth of its previous volume, water, pigments, and salts being absorbed into the body by the lymphatics and mucous added. The flow of bile is greater during the day, particularly after meals. I think it reasonable to suppose that the flow of bile being toward the gall bladder for storage and concentration during the day time, explains the great tendency of stones to become lodged in the neck of the gall bladder with the production of colic at night when the flow may be toward the ampulla. Without outflow and distention gall bladder colic, of course, does not occur.

In the intestines additional portions of water and salt together with pigment and cholesterin from the bile are absorbed to be again used in the body. The continued loss of all bile from the body which is fatal in dogs, is harmful in man, and it is our expe-

rience that patients with a chronic biliary fistula show less resistance to operation than those who have not had this loss. For these patients, not only should the fluid intake be greatly increased, calcium and bile salts given, but the daily feeding of cooked liver should be considered.

It is evident that the various hepatic functions will be more or less impaired in disease. Especially important are the results when the liver fails to supply a sufficient quantity of glucose for combustion.

Glucose deficiency results in: 1, *Deficient combustion*—loss of heat and energy; (2), *imperfect combustion of fats*—formation of diacetic acid, acetone with acetonemia, acidosis, coma, vomiting, drowsiness, stupor acetone odor to breath, fall in alkaline reserve rise in ammonia in urine; (3), *imperfect conversion amino-acids* into ammonia and urea with uremia, convulsions, eclampsia; (4), *imperfect detoxication conjugation of split proteins*—formation of tryptophan, indol, indoxyl, with vaso motor depression, shock, indoxyl sulphuric acid ethereal sulphates not properly conjugated by sulphuric or glycuronic acid; (5), *complicating high ileus*—chloride deficiency — alkalinosis, vomiting, tetany.

Jaundice is characterized by an excess of bilirubin in tissues (bilirubin is formed from waste hemogoblin by Kupffer cells in reticulo-endothelial system of liver, spleen, bone marrow, etc., is stored in liver and eliminated with bile). Characterized by (1), Pigmentation; (2), deficient available calcium, fibrinogen, glucose, water; (3), cholemia; (4), *test—a,* VanDen Bergh; *b*—Icterus index.

Varieties—(1) Biliary or obstructive—remove stone or other obstruction; (2), hepatic toxic or infectious (polygonal cells aid to secrete bilirubin into bile), treatment for hepatic deficiency, cholecysto-gastrostomy; (3), hemolytic—reduce production of bilirubin—splenectomy.

In jaundice the bilirubin of the blood fixes the calcium. As calcium is not available there is a tendency to hemorrhage, softening of liver and possibly tetany. The function of the liver is also seriously impaired. Jaundiced dogs no longer detoxicate benzoic acid, a product of proteid decomposition. With non-obstructive jaundice urobilin formed by bacterial decomposition of biliverdin in the intestines or biliary ducts and carried to the liver by the portal blood is no longer removed by the liver, but is eliminated by the kidneys. This occurs when one-third of the liver is removed. Experimentally the greatly increased danger of operations upon jaundiced patients is well known.

The gall bladder has a capacity of about 30 c.c. or a little less than one hour's secretion of bile. In the gall bladder bile is concentrated to one-tenth of its previous volume, salt, pigment and water removed through the lymphatics, and mucous added. The gall bladder is filled by pressure within the biliary ducts, an elastic tension bulb; its walls contain elastic tissue but relatively little muscle, and active contraction of the gall bladder has never been proved under any form of stimulation. Evidently it only empties passively through its own elasticity and by the pressure of adjacent organs. Copher has shown that it is never completely empty Melzer's theory of contrary innervation as applied to the gall bladder, has during recent years been refuted by many observations. The sphincter of Oddi varies in muscular development but seems rather unimportant. The flow of bile and pancreatic juice from the ampulla is controlled more by the contractions of the duodenum rather than the sphincter of Oddi. The common duct runs obliquely one, two or more centimeters through the duodenal wall, and during duodenal contraction is obstructed, while peristaltic waves of the duodenum have a milking effect causing spurts of bile to be ejected. (Copher and Kodami.) The flow of bile is stimulated more by oleic acids or a fat meal (egg yolks and cream) or pituitrin than by magnesium sulphate in the duodenum. Under an anesthetic the pressure of bile in the gall bladder is from one hundred to two hundred millimeters of water, and from seventy-five to one hundred millimeters in the common duct. At six hundred millimeters the obstruction in the duodenal wall is forced.

Inflammation of the gall bladder may be tabulated as follows:

Cholecystitis — First stage — Cholecystic catarrh—age 10 to 35. Digestive, toxic and

focal symptoms. Operation mortality slight

Second stage—Stone colic—age 35 to 55. Cholecystic attacks. Operation mortality moderate.

Third stage—Serious complications—age 55 to 75. Gangrenous cholecystitis, peritonitis, pancreatitis, intestinal obstruction, hepatic abscess. Operation mortality high.

The gall bladder may become infected through the blood stream, through the bile, by an ascending infection from the duodenum, by a contiguity of inflammation, and by infection from the liver through the communicating lymphatics. Graham has emphasized the importance of this last method. The sequence being: (1), Infection in the portal area, as from appendicitis; (2), a secondary portal infection of the liver with hepatitis; (3), the spread of the infection from the liver through the lymphatics to the gall bladder.

Despite the tremendous amount of investigation devoted to the physiology of the liver during the last ten years, the diagnosis of gall bladder disease depends largely upon clinical observation. Infections of the gall bladder develop, usually, during the first and second decade, but as the local symptoms are unobtrusive the condition often is overlooked After fifteen to thirty years gall stones usually have developed, so that the cholecystitis is commonly manifested by gall bladder colic between the ages of thirty-five and fifty-five; after fifty-five serious secondary complications such as empyema of the gall bladder, necrosis or gangrene of the gall bladder, perforation and peritonitis, acute hemorrhagic pancreatitis, hepatitis, intestinal obstruction from gall stones and other complications are prone to occur. It is the rule that the gall bladder once infected, usually, is always infected. We can divide gall bladder disease, therefore, into three stages: First, the stage of cholecystic infection and cholecystic toxemia, which develops between the ages of ten and twenty with suggestive symptoms, characterized by fullness and distress after eating, sour bitter eructations, belching, and more rarely, vomiting. The dyspepsia being after the qualitative type rather than the quantitative dyspepsia of ulcer; that is, the patient shows idiosyncrasy to certain articles of diet, such as shell fish, boiled dinners, fried foods, pastries, fish and the like; and may not be influenced by the amount of food eaten. Idiosyncrasy toward certain foods and the inability to handle certain staple articles, such as milk or eggs is suggestive of biliary disease. It is one of the most common conditions that causes the patient to report periodically to a physician for relief from so-called biliousness or indigestion; and which is relieved temporarily by fasting, dieting, alkalies, or by a calomel and saline course.

Secondary focal and toxic symptoms occur and include arthritic and muscular complications, treated under the name of rheumatism myalgic lumbago, chronic arthritis, neuralgia, bilious sick headache, or various ocular symptoms.

The second stage has as its characteristic symptom gall bladder colic, the stones leading to recurrent obstruction to the outlet of the gall bladder. The attack is of sudden onset and usually occurs at night, often follows a heavy meal or dietetic indiscretion, frequently develops during or after pregnancy, and is characterized by a sense of great pressure and distress referred to the epigastrium and frequently radiating through to the back in the region of the eleventh rib. The patient feels that vomiting would give relief, and tries to induce vomiting by putting the finger down the throat, by taking soda, hot water, or a laxative. Vomiting may be followed by immediate relief. Usually the pain is so severe that the patient sends for a physician and a hypodermic is administered. The attack lasts from one-half hour to two or three hours, and the next day the patient is usually able to resume work. Hypo or anacidity are usual. Nocturnal attacks of acute indigestion in a middle aged obese person, especially a woman with a sense of some internal pressure that the patient tries to relieve by inducing vomiting, and that requires a hypodermic injection of morphine, and that is entirely relieved the day following, is almost surely a gall bladder colic. Cholecystic colic or a gall bladder attack with distension and inflammation of the gall bladder, without the presence of stones or the formation of pus resembles a prolonged and mild attack of stone colic. The

upper abdominal distress usually lasts several days, a hypodermic is not required, as the pain is not as intense as that from stone; the patient avoids food and may attempt to obtain relief by vomiting, and the distended gall bladder often may be felt below the costal border. The onset and subsidence are less abrupt than that from stone, and a slight or moderate rise in temperature may be present. It is to be emphasized that in most subacute forms of cholecystitis, and in gall stones, tenderness over the gall bladder or palpation or percussion is more often absent than present. The patient usually complains of pain in the epigastrium or under the ensiform, and tenderness is usually more marked here than elsewhere over the abdomen. If one depends upon tenderness of the gall bladder to make a diagnosis he will overlook many cases.

In the third stage, or stage of serious secondary complications, there usually is the history of preceding gall stone colic. With suppurating or gangrenous cholecystitis the patient notes that the present attack is more severe and more prolonged than any that preceded it. A serious gall stone colic that lasts over thirty-six hours, usually is associated with pus formation in the gall bladder, or necrosis of the wall. The patient is nauseated and vomits, has a moderate temperature 99° to 103° F., the color may be greyish, and the resistance of the enlarged gall bladder projecting below the costal margin is often felt. If greatly enlarged and inflamed the tip may come in contact with and inflame the parietal peritoneum at McBurney's point and as the greatest tenderness is found here the examiner may mistake the condition for that of appendicitis; this mistake should not occur if the examiner notes that the mass of resistant tenderness is continuous with the resistance that extends from under the right costal margin. Jaundice is not to be expected unless there is involvement of the common duct.

In acute pancreatitis the pain is of superlative degree, producing shock, and one-half, two-thirds or one grain of morphine may be required to relieve the excruciating pain. Free fluid in the abdomen rapidly develops, and there is increased resistance and tenderness in the epigastrium from the inflamed pancreas. An incision reveals the characteristic spots of necrosis on the abdominal fat, and the "beef broth" peritoneal fluid.

In a perforated gastric or duodenal ulcer the pain is also very severe and often accompanied by shock so that the patient may suddenly fall to the ground. Usually the patient is younger and a man, and the greatest resistance and tenderness is often about McBurney's point as the erosive chyme gravitates into the right iliac fossa. Rapidly developing evidence of free fluid and possibly gas in the abdominal cavity is suggestive, and at operation the presence of a mucoid bile or possibly blood stained fluid in the peritoneal cavity is suggestive.

With external biliary fistula there is waste of pigment for hemoglobin formation, loss of calcium with its influence on blood clotting and on the hardening of bone, and an increased tendency to tetany, loss of sodium salts with impaired digestion, waste of fat and of ingested calcium. In the absence of normal alkali from the intestines the calcium of the food combines with the fatty acids in the intestines forming an insoluble calcium soap, so that both the fat and calcium are lost to the body. Normally calcium is held in combination by the bilirubin of the bile. There is also loss of fluid and dehydration.

Tests for Biliary Disease

1. Cholecystography (Graham - Cole) is based upon the fact that phenol tetraiodophenophthalein is eliminated by the liver in the bile and collects and concentrates in the normal gall bladder producing a shadow upon the X-ray plate. Stones in the gall bladder produce defects in the shadow and by this test over ninety per cent of gall stones may be demonstrated, especially if the drug is given by intravenous injection. Graham claims the test to be 97 per cent effective when the drug is given intravenously, 75 per cent effective when given by mouth. A delayed or imperfect shadow in the gall bladder indicates insufficient concentrating power, therefore, disease of the gall bladder, obstruction of ducts preventing bile from entering the gall bladder or an impaired eliminative power by the liver. The last probably is of little value

as the gall bladder has been well visualized in acute yellow atrophy of the liver and in chloroform poisoning. During the test the patient should be starved to prevent the rapid emptying of the gall bladder.

2. Icterus Index, which is normally 0.2 to .6, is determined by comparing the color of the blood serum with standard solutions of potassium bicromate. Jaundice is visible when the Icterus Index is at 15, between 6 and 15 it is evident that latent jaundice is present.

3. Van Den Bergh test is the diazo reaction applied to blood serum and is a very delicate test for latent jaundice. The normal amount of bilirubin in the blood serum is from 1-400,000, to 1-1,000,000. The unit employed is 1 to 200,000. The qualitative or direct test with prompt reaction is found in obstructive jaundice. In the early stage the reaction may be direct, delayed direct, indirect or biphasic. Hemolytic jaundice is usually associated with an indirect or delayed reaction while a biphasic or combined reaction has been associated with jaundice from hepatic disease. These finer differentiations first claimed have not been fully confirmed. The test is valuable in showing slight latent forms of jaundice, and in indicating whether the jaundice is increasing or subsiding.

4. Dye elimination test of Rowntree-Rosenthal. Five milligrams of phenoltetrachlorphthalien is injected intravenously for every kilo of body weight, or perhaps better two milligrams of bromsulphalein (Rosenthal) two milligrams per kilo of weight. As these drugs are eliminated like bilirubin by the liver, the test depends upon the rapidity with which the dye is removed from the blood. Retention of the dye is not always associated with bilirubin retention, and the test is of some value in the diagnosis of cirrhosis and carcinoma of the liver. The test has a limited value and the injection produces a very troublesome thrombosis of the veins.

Urobilin Test. Urobilin is formed by bacteria action on bilirubin in the intestines or biliary ducts. It is absorbed by the portal circulation and reconverted to bilirubin by the liver. If from one-third to four-fifths of the liver are obstructed bilirubin is not converted and eliminated by the liver, but escapes through the urine, bilirubinuria. Bilirubinuria, therefore, indicates the bile is probably entering the intestine and that the liver is seriously damaged.

Protein Metabolism. The amount of urea nitrogen in the blood varies with the efficiency of the kidneys. In serious disease of the liver there is often a decrease of urea nitrogen in the blood in relation to total non-protein nitrogen with increased amount of ammonia in the urine. This condition, however, may result from other causes.

Hemoclastic Crisis of Widal is based on the impaired ability of the liver to detoxicate the protein, split products that circulate with an anaphylactic reaction (Leucopenia). After an all night fast two hundred c.c. of milk are given and the leucocytes counted every twenty minutes for one hour. The test is of little value as a digestive leucopenia is not infrequent.

Bromsulphthalein is superior as it is a soluble non-toxic indicator although negative results do not negative disease of the liver. Other pigments in the blood interfere with the Icterus Index test.

Carbohydrate Test. A positive rise in the blood sugar after the injection of thirty to fifty grams of levulose taken after a twelve to fifteen hours' fast may suggest a disturbance in carbohydrate metabolism in the liver, but as extra hepatic organs may convert and store glycogen, the test is not reliable.

In the diagnosis of biliary disease the laboratory tests for the most part should not be depended upon. Tests for the retention of dye eliminated by the liver like bilirubin, the levulose tolerance test, the conjugation of toxic proteins test, all leave much to be desired. The Van Den Bergh diazo test for bilirubin in the blood is of value in showing latent jaundice, whether the jaundice is increasing or decreasing either before or after operation, and in a limited way, in differentiating extra hepatic obstruction from hemolytic jaundice. The clotting and calcium clotting time is instructive, although it does not always show what the tendency to hemorrhage will be during, or after operation. The plasma CO^2 combining power normally 56 to 65 volumes per cent gives a clue as to

acidosis or alkalinosis. Acidosis, shown by an increase CO^2 combining power and an increase in blood chlorides, if sufficiently marked, results in convulsions or tetany. It is to be combatted by the free use of liquids, glucose and alkali. It is noteworthy that in biliary obstruction acidosis is usual, where in high intestinal obstruction alkalinosis with decreased CO^2 combining power and a decrease of chloride is to be expected. An ileus however, may complicate biliary disease, and alkalinosis should be suspected if the patient has continuous, regurgitant vomiting of the upper intestinal type.

Alkalinosis is, of course, to be treated by the free use of fluids, glucose, sodium and ammonium chloride.

Final products of protein metabolism, urea and creatinin, show amounts in the blood that vary with production and the eliminative power of the kidney. Blood urea, normally 26 mg. per 100 c. c. of blood, is in serious excess when 125 mg. or more are found present. Blood creatinin, normally 2 mg. per 100 c.c. of blood, 10 or more mg. show a serious excess. A marked increase of either product is serious. Blood chlorides, normally 566-600 per 100 c.c. of blood, are decreased in alkalinosis and increased with increased plasma CO^2 combining power in acidosis. Deficiency in available calcium as is usual in jaundice, not only favors operative and post operative hemorrhage, but may lead to tetany; this has led to the general adoption of Walter's suggestion that 5 c.c. of a 10 per cent solution of calcium chloride be injected intravenously daily for three days before operation upon a jaundiced patient.

Many of the laboratory tests necessitate starvation, which, especially in fat persons, may lead to acidosis. The drugs employed may have a toxic action upon the liver cells In the very ill patient, therefore, tests requiring starvation or the employment of poisonous drugs should be avoided, and in all cases it is important to avoid these tests in the week immediately preceding a serious operation upon the biliary system.

Before, during and after operation upon the biliary system the maintenance of biliary efficiency is most important.

Treatment of Hepatic Deficiency:

1. In all cases—*Water*, (4000 to 8000 c.c. daily through mouth rectum, subcutaneous tissues and veins), *glucose* (500 to 1000 c.c. of tested 5 or 10 per cent solution intravenously daily, additional amounts by stomach and rectum, never subcutaneously); *elimination* (laxative, lavage, enema).

2. Avoidance of ether, choloroform, cyanosis (nitrous oxide) morphine, alkaloids, meat.

3. *Salt* (subcutaneously 4000 to 8000 c.c. daily, under skin or in veins daily), or ammonium chloride (200 to 500 c.c. by rectum daily), in alkalinosis—vomiting, convulsions, tetany (intestinal obstruction).

4. Alkalies in acidosis (Fisher's solution 500 to 1000 c.c. intravenously, 200 to 1000 by rectum daily)—stupor, coma.

5. Calcium chloride in jaundice (5 c.c. of 10 per cent solution intravenously daily for three days before and, at times, after operation).

6. Cooked liver (250 grams daily) and bile in bile starvation (fistula).

In operating for biliary diseases one should be guided not only by the age and resistance of the patient but by the facilities and ability of the operator. The inexperienced operator; the operator with poor assistance, poor light, poor exposure of the operative field, had better do a relatively safe and easy cholecystostomy than a dangerous cholecystectomy. The latter is an operation for the expert surgeon operating under ideal conditions, upon a patient in fair general condition, who is not toxic or jaundiced. With cholecystectomy the danger of accidental injury to ducts and blood vessels, damage to the liver from traction, pressure, or laceration, secondary hemorrhage, secondary leakage of bile, are all greatly increased. Operations for:

1. *Cholecystitis* (a) Chronic or subacute—cholecystostomy; (b) with Stone—cholecystectomy; (c) purulent or gangrenous—(1) in young with good resistance—cholecystectomy or cholecystostomy, (2) in the old with poor resistance—choledochostomy,; (d) with

advanced degenerative change in liver—cholecystostomy—prolonged drainage.

2. *Common Duct Obstruction* (a) With slight jaundice—choledochostomy; (b) with intense jaundice — cholecysto-gastrostomy. Never cholecystectomy—gradual decompression of liver—removal of stones if required later.

3. *External Biliary Fistula* (a) Liberation of fistulous tube and introduction into stomach or duodenum; (b) reconstruction and suture of ducts over rubber tube; (c) hepatic gastrostomy.

4. *Recurrent Colic After Cholecystectomy* (a) Explore, remove stones or other obstruction; (b) prolonged drainage of common duct.

TETANY WITH REPORT OF A FATAL CASE FOLLOWING SUBCUTANEOUS ADMINISTRATION OF SODIUM BICARBONATE *

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THE FIRST reference to tetany in the literature is attributed to Clarke (1815). Other names, particularly those of Kellie, Steinheim and Dansie are associated with the earlier descriptions of the condition. To Covisart (1852) we owe the title, tetany.

Tetany is regarded by most authorities, not as a disease but as a condition. It is a condition of hyperirritability of the nervous system, in which response to stimuli, especially mechanical and electrical, is greatly in excess of the normal. One peculiarity of this hyperirritability is, that it may exist in a person without giving the least evidence of its presence until upon some suitable provocation, such as an acute infection, or a diarrhea, it manifests itself by certain definite symptoms. There are no statistics on the subject to indicate the number of persons so affected.

There are thus two forms of tetany: The latent, and the active. Latent tetany is nervous hyperexcitability without symptoms. Active tetany is nervous hyperexcitability with symptoms. During latency, it is nearly always possible to elicit Erb's phenomenon, and it is sometimes possible to obtain Trousseau's. These phenomena are diagnostic, occurring in no other condition. Chvostek's sign is less reliable.

It is now known that several clinical conditions, laryngismus, stridulus, holding breath spells, convulsions, bronchospasm, rotary head movements and nystagmus are manifestations of tetany.

Etiology: Tetany may occur at any age in either sex. Trousseau mentions a case at 52 and one at 60, and yet it occurs in infancy —most frequently during the latter half of the first and during the second year. It is rarely seen in the first three months of life. Sporadic cases may occur anywhere, yet in some places it is endemic and even epidemics have occurred in Vienna. It may be associated with certain diseases of the stomach or intestines (gastric-tetany; colonic tetany) or in pregnancy or lactation. It has been shown that it may manifest itself in the course of certain infections or intoxications. It is probable that in all of these cases the condition of tetany was already present in latent form, and the pregnancy, the infection or the intoxication, simply acted as the stimulus which made it manifest itself.

The association of tetany with rickets is a very close one. Not only is it found at the time of year when active rickets is most common, January, February and March, but almost all children with tetany show some

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of the symptoms of rickets. While cases are observed in which no rachitic manifestations are present, rickets cannot be excluded, for the first evidences of rickets in the bones escape clinical observation. Symptoms of both rickets and tetany begin to be seen about the same age. Both tetany and rickets are relatively infrequent in the breast-fed. It has been shown that in rickets, as well as in tetany, there is a disturbance of the calcium metabolism. In spite of extensive investigation along this line, no conclusive evidence has resulted, showing the exact relationship between tetany and rickets.

It is well established that typical tetany results from hypoparathyroidism caused by either disease or absence of the parathyroid glands. Pineles, especially, and others after him, urged the medical world to accept hypoparathyroidism as a unitary conception for the pathogenesis of tetany. But the more cautious workers on tetany now believe that the symptoms may also occur independently of disturbance of the parathyroid function.

Aside from hypoparathyroidism, there are at present three main theories as to the causation of tetany.

(1) An intoxication due to certain physiological active aminobases, such as methyl-guanidin and dimethyl-guanidin. W. Koch in 1912 and 1913 found methyl-gaunidin in urine of dogs suffering from tetany after parathroidectomy. Later Paton and Findlay in England experimenting on different animals, produced by injection of guanidin hydrocloride, symptoms that they assert are indistinguishable from those of tetany following parathyroidectomy. They found that: (1) guanidin tetany is relieved by calcium; (2) latent tetany can be precipitated by guanidin in doses insufficient to cause symptoms in normal dogs; (3) guanidin increases the electrical excitability of the peripheral nerves; (4) there is an optimum concentration for the action on the central nervous system is directly proportional to the dose. E. Frank of Breslau (1922) working with dimethyl-guanidin, which is eight times as poisonous as guanidin as a tetany-producing poison, found that all degrees of tetany could be produced in experimental animals by injecting this substance. He further found that the injection of 10 per cent solution of calcium chloride controlled this tetany as it does other forms of tetany. His theory is that in parathyroid insufficiency enough dimethyl-guanidin may become active to injure the special parts of the nervous system that are most concerned in tetany. As he suggests. it is conceivable that a latent tetany, due to mild hypoparathyroidism might become manifest from any cause that increases this endocrine deficiency; from any cause that leads to the removal of acids from the body (*e. g.* vomiting of pyloric stenosis); from any cause that diminishes the calcium content of vomiting of pyloric stenosis); from any cause that leads to an increase of sodium cations (*e. g.* intravenous injection of sodium bicarbonate) or of potassium cations and phosphoric acid anions (*e. g.* feeding of cow's milk to sucklings).

(2) A disturbance of the acid-base equilibrium, either in the direction of an acidosis or of an alkalosis. Graham, from his studies of the blood chemistry in tetany, comes to the conclusion that an acidosis always causes a disappearance of the signs of tetany. It has been found that tetany can be cured by adding acid or acid forming substances to the diet. Yet it is not necessarily true that tetany is due to an alkalosis. Calcium is known to remain in solution only in an acid medium and presumably may be absorbed only from such a medium. It is quite reasonable to assume that the serum calcium content may be dependent on the state of the acid base balance, that is, when the blood tends to be more acid, more calcium remains in solution, and when the tendency is toward the alkaline side, the amount of calcium is diminished.

(3) A disturbance of the equilibrium between antagonistic cations in the blood and tissue fluids, especially between calcium and magnesium cations on the one hand, and potassium and sodium cations on the other. Sodium and potassium act as stimulants to the nervous system, while calcium and magnesium have a depressant action. Loeb showed that the immersion of a muscle-nerve preparation in a solution of a salt which pre-

cipitates or renders inactive the calcium, gives rise to twitchings and these twitchings are suppressed by the addition of fresh calcium to the solution. Sabbatini found that a solution of calcium applied to the brain diminishes its irritability, but the irritability was increased by the substances which precipitate calcium, such as oxalates or citrates. Quest produced electrical hyperexcitability in animals by giving them a calcium free diet. MacCallum and Voegtlin showed that in the tetany of parathyroidectomized dogs, there is a marked reduction of calcium, and that the symptoms were promptly controlled by intravenous administration of calcium. Howland and Marriott (1917) found the sodium and potassium within normal limits in infantile tetany, but they found that the blood calcium is invariably lowered below normal, which is 10.0 mg. per 100 c.c. Marriott states that while there is invariably a reduction in the blood calcium, yet not every infant with a low blood calcium shows active manifestations of tetany. The tetany may be latent and become manifest only in the presence of some superimposed infection or some extraneous factor.

It seems then that it may be stated that normal nervous activity occurs only when there is a physiological equilibrium obtaining between the stimulating Na. plus K. cations and the depressing Ca. plus Mg. cations. Any disturbance in the relative proportion of these elements results in abnormal nerve irritability.

Signs and Symptoms: Only the most important will be briefly mentioned here.

(1) Carpo-pedal spasm. Spasm of the hands producing the so-called "obstetrical hand," and spasm of the feet with legs straight and stiff, the feet in extension and toes flexed on soles, with involved muscle hard, tense and painful. Carpo-pedal spasm is pathognomonic of tetany.

(2) General convulsions. Salters states that 90 per cent of all convulsions occurring under two years of age are caused by tetany.

(3) Laryngospasm.

(4) "Holding-breath spells."

(5) Expiratory apnea, which is due to spasm of the diaphragm, and the other muscles of respiration.

(6) Ibrahim emphasized the fact that many times spasm of the pylorus producing vomiting of the intestines, causing pain and meteorism, of the anal sphincter leading to constipation and of the vesical sphincter causing retention of urine, are symptoms of tetany.

(7) Trousseau's sign is elicited by constriction around an arm above the elbow, or a leg, with sufficient force to stop the circulation for from one to five minutes. A carpal, or pedal spasm results. This sign is not positive in all cases of tetany, but when present, is pathognomonic.

(8) Chvostek's sign is a spasmodic contraction of the muscles of the face, when a branch of the facial nerve is tapped. Howland thinks this sign is pathognomonic of tetany in children under two years of age, but says it may occur in older children and adults who do not have tetany.

(9) Erb's sign. Muscular contractions are produced by the application of the galvanic current to the motor nerves. The contractions occur with the making or breaking of the current.

(10) Reduction of the blood calcium below normal.

Erb's sign and a lowered blood calcium are of great importance in the diagnosis of latent tetany, for there is no other way in which we can diagnose this condition.

The differential diagnosis is usually not difficult. Tetanus may be distinguished by the usual history of a wound and the fact that the contraction begins in the face and not in the extremities. In epilepsy, the convulsions are rarely so frequent. In meningitis there are characteristic signs and a lumbar puncture would be conclusive. Hysteria may be distinguished by the age, sex, and stigmata. Encephalitis could be distinguished by the absence of the Trousseau, Chvostek, or Erb's phenomena.

Treatment: Prophylaxis should be emphasized. Tetany occurs only rarely with breast feeding. Maternal nursing is not only the best preventive, but feeding with woman's milk is also of great help in stopping the further progress of tetany in infants. Those

under eight months of age giving symptoms of tetany should have woman's milk if possible. Abundant fresh air and especially sunshine should be given. Since rickets and tetany are so frequently associated, there should be prolonged administration of cod liver oil. There can be no doubt that this is beneficial in many cases of tetany. It should be continued in smaller doses for several months and should certainly be given through the winter months, January, February and March. Tetany can be controlled by calcium chloride, which should be given in doses as large as necessary to control the condition,—30 to 60 grains daily. When administered by mouth it requires some time before it influences the disease and in so many cases it is necessary to give it intravenously. It is given intravenously in from 10 to 25 per cent solution. Another drug which is of very great importance in the treatment of tetany is magnesium sulphate By this the convulsions and other active acute symptoms can be controlled until the effect of the calcium chloride becomes manifest. It has an almost immediate effect. It is given subcutaneously, in from 10 to 50 per cent solution, in dosage of 0.2 gm. per Kg. (1½ gr. per pound) of body weight.

Tetany following parathyroidectomy is treated by administration of calcium chloride, as described, and in addition parathyroid gland per os.

Following the work of Collip at the University of Alberta, Canada, there is now available a preparation called Para-thormone which, it is claimed, will prevent or control parathyroid tetany and regulate the level of blood calcium. It is an aqueous extract of the parathyroid glands and its action seems to be to cause a rise in the total blood-serum calcium, and to render more available or utilizable the calcium to the tissues. My use of this preparation has not been extensive enough to justify any definite conclusions as to its therapeutic value.

Report of Case: Baby W. white girl, age 22 months, was seen July 25, 1925, and was removed at once to Mullens Hospital. Family history unimportant except that one sister and one brother died in infancy of broncho-pneumonia complicating pertussis.

Past History: Was breast fed baby and was weaned about twelve months of age Dentition normal. Began walking about fourteen months of age. Has not had measles, mumps, chickenpox, scarlet fever, or diphtheria nor any illness of consequence.

Present Illness: About one month ago diarrhea began. This has continued since that time. From four to six stools per day, with some mucus and occasionally a little blood. Has vomited several times. For past four days has been having from six to ten stools per day with much mucus and some blood. Some time ago was exposed to whooping cough. About twenty-six days after exposure began to cough and now has a persistent, frequent, rather dry cough. Mother states that temperature seemed to become much higher about two days ago.

Physical Examination: Patient is a well developed white girl baby twenty-two months of age. Has a rather emaciated and "washed out" look. Is slightly flushed and has a rapid, labored respiration, but no expiratory grunt. Temperature 103.5 rectal, pulse 130, and respiration 30. Eyes, ears, mouth and throat negative. Pulse regular and good quality. Heart negative, except for the accelerated rate. Examination of the lungs reveals a broncho-pneumonia in both lungs with more involvement in left lung, posteriorly. Abdomen negative except for slight generalized tenderness, and the skin when "pinched up" returns very slowly to its original position. Reflexes normal. No glandular enlargement.

Diagnosis: Ileo-Colitis, Pertussis, and Broncho-pneumonia.

Treatment and Course: 30 c.c. whole blood from the mother was given intramuscularly. Water forced. Protein milk ozs. 11, q.2h. when awake. Milk of magnesia drams 2, q.4h. High colonic irrigations with warm salt sol. B. I. D. The child drank a fair amount of water, but would take only very little of the milk. There were no signs of tetany.

July 26 (next morning). The patient was slightly improved. Temperature 102, pulse 120, and respiration 28. Examination of the lungs revealed apparently slight improve-

ment. Was having a stool about every two hours, some mucus and a little blood. To combat acidosis and afford some nourishment a subcutaneous infusion of glucose drams 3 and sodium bicarbonate drams 1½ was ordered. 250 c.c. of this was given at 1 P. M. At 4 P. M. temperature was 103.4 (rectal). Pulse 124, and resp. 26. and baby was resting well. At 5:30 P. M. the other 250 c.c. of the glucose-sodium bicarbonate infusion was given. At 7:15 the nurse phoned me that the baby was having convulsions. When I reached the hospital the baby was having typical carpo-pedal spasms and Trousseau's and Chvostek's signs were positive. It had several generalized convulsions with frothing at the mouth, marked twitchings of the muscles of the face, especially around the mouth, and very labored respiration. Magnesium sulphate ready for administration subcutaneously was not available. Morphine sulph. gr. 1/32 was given, camphor in oil, caffeine sodio-benzoate, and digifoline were also given subcutaneously. Death ensued in a short while.

Immediate cause of death: Tetany.

Contributory cause of death: Ileo-colitis, pertussis, broncho-pneumonia and administration of sodium-bicarbonate.

Discussion

What caused the tetany which resulted in the death of this child? Since the blood calcium had not been determined and Erb's sign had not been tried before the beginning of this illness, it is impossible to say definitely, but in all probability tetany was already present in latent form. This latent condition had been aggravated by the diarrhea and the two acute infections, pertussis and broncho-pneumonia. From what has already been said in regard to the etiology of tetany, it is quite reasonable to say that the sodium-bicarbonate which was given in the infusion, was the agent or stimulus which caused the latent tetany to become manifest. How did the sodium bicarbonate bring this about? In two ways: (1) Disturbance of the acid-base equilibrium, and (2) disturbance in the equilibrium between calcium plus magnesium, and sodium plus potassium. (1) The sodium bicarbonate may have caused a decrease on the acid side, and possible even a tendency to alkalosis. Thus some calcium was rendered insoluble and hence less calcium was available. (2) The sodium of the infusion increased the sodium content of the blood. Thus there was an increase on the sodium plus potassium side, the stimulant side, and a decrease on the calcium plus magnesium side, the depressant side.

Barker thinks that possibly the etiology of tetany may be explained by a pathologic chain that connects parathyroid deficiency with hyperexcitability of the nervous system. Intoxication by guanidin-bases, disturbance of the acid-base equilibrium, or disturbance of the relative proportions of antagonistic cations in the blood and tissue fluids may prove to be among the links. Certain forms of tetany may conceivably be entirely independent of any primary disturbance of the parathyroid functions, for pathological processes may easily be thought of as becoming interpolated at the level of any one of the series of links in the parathyroid-nervous system chain, sometimes closer to the parathyroids, sometimes close to the nervous system. For example: In the tetany of hyperpnea, coming on after forced respiration it is scarcely conceivable that the parathyroid function can be concerned. In this case it would seem more likely that the change sets in at the alkalosis link, whereas in the tetany of chronic diarrhea, accompanied by increased calcium elimination in the feces, it may set in at a cation antagonism link.

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DISCUSSION

DR. JOHN T. THORNTON, Wheeling:

I have been very much interested in this paper. I think what should be stressed particularly is that all of these conditions, that the majority of cases of convulsions, are due to tetany, or spasmophilia, as it is often called; and that the cases should be recognized as such, because the treatment is quite efficient when you recognize the cause, *i. e.*, that it is due to lowered blood calcium. The administration of calcium salts is specific, just as specific as any drug or any measure we have. Now, I do not believe it is generally recognized that the great majority of convulsions in children, particularly in infants, are manifestations of tetany; and that the administration of calcium salts will control the convulsions Emphasis should be laid on the doses, which the doctor stated. I usually give these cases 15 grains of calcium chloride every four hours. This may seem to some a large dose for a little baby, but it is not because it has been used repeatedly. Anything else that will increase the serum calcium is of benefit. The use of the Alpine light has been found to increase the serum calcium. I have found that most beneficial and use it wherever possible in these cases.

In regard to the use of the parathyroid extract, I have had occasion to use it in only one case up to the present time, but, as I understand it, it can be used in any case of tetany regardless of whether the case is due to hypoparathyroidism, or not I think the doctor indicated that it should be used only in those cases where there is a lowered function of the parathyroid gland Certainly it seems reasonable that the use of the extract would tend to increase the serum calcium, and I intend to use it in future cases.

In these cases I give the sodium and potassium in the form of ..... I do not use sodium or potassium bromide in these cases.

I have had a rather large number of cases in breast-fed babies, and in those cases the mother's milk has been distinctly inferior, and I have had to take them off the mother's milk and use other feeding. I have used with good result buttermilk or lactic acid milk in such cases.

All writers speak of the association of rickets and tetany. I have never been able to understand that exactly, because in tetany the serum calcium is lowered, while in rickets there is no diminution in the serum calcium, or very slight diminution. So I have never been able to make those facts "gee" up.

DR. ALBERT H. HOGE, Bluefield:

I want to thank Dr. Morris for his thorough review of the literature on this subject, and for bringing it before us in such a forceful and convincing manner. So much has been written on this topic in the past few years that one who is busy is unable to follow it. I am very grateful to him for his thorough review of the literature and its presentation in such a brief form. Dr. Morris represents the Mercer County Medical Society, and I want to congratulate the program committee this year on their attempt to bring out the younger men of the society to read papers. I am very proud of this representative of our society, and also of Dr. Fox who will appear tomorrow.

A great deal of work has been done on this subject, and a great deal of progress has been made. The treatment has been thoroughly brought out by Dr. Morris and Dr. Thornton, and I shall not take up your time further by going into that matter. I do want to express my appreciation of the essayist's work and the able way in which he has presented this subject.

DR. J. L. MILLER, Thomas:

I should like to mention a case that I saw on last Sunday. First, however, I want to say that I enjoyed very much Dr. Morris's very thorough presentation of the subject,

which is one that I think we general practitioners do not recognize as frequently as we should, judging by the number of cases that have come to me in consultation. The case I wish to present was one brought to me last Sunday in consultation. It was a female child eight months old, breast fed and well nourished. She had had measles about three months before, followed by broncho-pneumonia which lasted for quite some time. Two weeks previous to my seeing the child, tetany (or at least I think it is tetany) developed. The unusual feature to me was that the child seemed at first glance to have an exaggerated general chorea, even including a nystagmus. Every muscle was twitching and jumping. I had never seen a case like it before. The diagnosis was made on the characteristic thumb, extended feet, and positive Trousseau sign.

I wish to say that I have been able to get quicker results by using calcium lactate also, in addition to the calcium bromide. It has proved very satisfactory to me.

DR. C. L. HOLLAND, Fairmont:

Tetany, that most interesting phenomenon, is not a disease but merely a symptom, as Finkelstein has told us, of the spasmophiliac diathesis, the chief symptoms of which are laryngismus stridulus, tetany and generalized convulsions. Parathyroid dysfunction has been called in question, and considerable work has been done along that line, but many of the questions are still to be answered. In many cases there is deficiency in the blood calcium, but deficiency in the blood calcium has not been demonstrated in all cases. In cases of tetany, of course, breast milk is curative, and if you can get breast milk for one of those little fellows with tetany your troubles are almost at an end. If the child is fed on cow's milk the problem is more difficult, while there is an abundance of calcium in cow's milk (three and a half times as much as in breast milk), it may not be utilized, and you get the convulsions or tetany. Of course, as a temporary measure, breast milk not being available, a carbohydrate diet is valuable, but it is impossible to keep a child for any length of time on a purely carbohydrate diet. He must have other elements.

Dr. Shawkey spoke of the use of sodium bicarbonate, as a cause of tetany, in his discussion of acidosis. There are good theoretical as well as practical reasons for the administration of a solution of magnesium sulphate hypodermically when you are giving massive doses of alkali, to guard against the possibility of a tetany, and that was one of the things I wanted to bring out in regard to the treatment of acidosis when the president called time on me.

As to the age at which tetany occurs, you notice the doctor said you will find it not earlier than the second month. The writers on this subject say that tetany is rarely discernible before the second month and not very common before the sixth month. I have in my pocket the report of a case of tetany in a newly-born child.

Case Report: Baby W., male, delivered at term, April 18, by Cesarean section, in service of Dr. Carl J. Carter at Cook Hospital; was well nourished; weighed 7 pounds 10 ounces. The mother had been in labor 36 hours, during which time the head had not been engaged, due to uterine inertia. A marginal placenta previa was found to exist. The membranes were intact. *Family History:* The father was living and well. The mother's age was 28 years, weight 160 pounds. She had always been nervous, with a rapid heart, but was not believed to have had hyperthyroidism. Her urine was normal. There had been three previous pregnancies. The first child was living and well. The second, a version, died at birth. Both placenta were retained. The third pregnancy miscarried at three months; the secundines were removed with a curet.

The mother developed a toxemia, with acute dilatation of the stomach, and died six days after section. The baby was put on a mixture of Dryco and Dextri-maltose No. 2, in water, for five days. This was partly regurgitated. He was then referred to me. The food was changed to skimmed lactic acid milk with Karo syrup added. This was retained, and the stools were normal. On the sixth day the weight had declined to 7 pounds 2 ounces; on the twelfth day it had risen to 7 pounds 9 3/4

ounces. On April 28, when ten days old, the child developed typical convulsions of tetany with well marked carpopedal spasm. Chvostek's phenomenon and Trousseau's sign were both found to exist. A test for Erb's phenomenon was not made. The blood calcium was not determined. Breast milk was obtained as a part of the food, the deficiency being made up with lactic acid milk. Calcium lactate was given by mouth, 5 grains each 24 hours. The convulsions continued until May 3, when they disappeared On May 6 the weight was 7 pounds 13 ounces. On May 20 he was seen in my office; weight 8 pounds 12 ounces; general condition good; stools normal; on lactic acid milk; no more convulsions; Chvostek's phenomenon and Trousseau's sign still faintly discernible.

DR. WILLIAM M. SHEPPE, Wheeling:

There are two points I would like to make. One is in regard to serum calcium determinations. One doctor has said it is a very difficult procedure, but it is not for one who is accustomed to blood chemistry. You may without hesitation call upon laboratory workers to do serum calcium determinations. If they are not prepared to do this work they should be.

Parathyroid extract is a very potent drug. It possibly may bear the same relation to calcium that insulin does to glucose, *i. e.*, to make the calcium available.

Parathormone is the trade name of the extract isolated by Collip. It is a very potent drug and should be administered with great care.

DR. MORRIS, closing the discussion:

Dr. Sheppe mentioned parathormone. I did not mean to indicate in my paper that parathormone is of value only following parathyroidectomy or some dysfunction of the parathyroids. My idea is that this is a very potent drug which is of value in any case of disturbed calcium metabolism.

Dr. Miller mentioned calcium lactate. I think the consensus of opinion is that calcium lactate can be used as well as calcium chloride but it can not be used intravenously and is probably not more than half as efficient as calcium chloride.

Dr. Holland mentioned the advisability, when you are going to use considerable sodium bicarbonate, of administering magnesium sulphate intramuscularly. I had not thought of that, but think it is probably a very good procedure, because by it you avoid the danger of disturbing the balance between the calcium plus magnesium, and sodium plus potassium.

I enjoyed the case report which Dr. Holland gave. I had never seen or heard of one so young.

Tetany is far more frequent than we have formerly supposed. Many cases have gone unrecognized and therefore have been improperly treated. If we are on our toes and keep this thing in mind we shall be able to recognize them and to treat them far more efficiently.

INFECTIOUS MONONUCLEOSIS *

By R. M. WYLIE, *A. M., M. D.*
Huntington, W. Va.

WITHIN THE PAST FEW YEARS certain infectious diseases which had previously been observed only as sporadic cases, began to assume epidemic character in various localities. Since the occasional cases had been but imperfectly studied, physicians found themselves seriously handicapped in dealing with the epidemics. One might mention poliomyelitis, encephalitis, influenza and acute infectious jaundice as diseases which have assumed epidemic character after a somewhat infrequent occurrence in previous years. One prominent physician has said: "Any acute infection is worthy of serious study, and every attempt should be made to add information about those which,

* Read in the Section for Internal Medicine at the fifty-ninth annual session of the West Virginia State Medical Association, at Morgantown, May 26, 1926.

at the present time, are imperfectly understood."

Any acute infection which produces a marked lymphocytosis has always attracted attention, and while some very common diseases of childhood do produce such a blood picture, the condition is rarer in adults, and when found is most often due to diseases the prognosis of which is very poor indeed.

In addition to the mononuclear leukocytosis seen in children, one occasionally finds a similar picture in adults in reaction to an acute infection. This condition has at times been mistaken for typhoid, tuberculosis, leukemia and Hodgkin's disease, and has been described by various authors under the names of glandular fever, acute benign lymphoblastosis, non-tuberculous lymphadenitis, acute benign leukemia, and infectious mononucleosis, the latter being now most generally adopted.

The cases so far described have all occurred in young adults, and no epidemic has been reported. The onset is usually rather gradual, with fever, aches, pains, prostration and often a pharyngitis. In a few days the cervical glands become enlarged, often during a period of 24 hours, and all the superficial lymph nodes, even the epitrochlears, may be involved. In the majority of cases there is a palpable spleen. The course of the disease is from two to four weeks, and the fever which rarely rises above 103 F. and is of the remittent or intermittent type, gradually subsides. The enlarged glands and spleen slowly return to normal size, though this may require some weeks.

In connection with the lymphadenitis there is a blood picture which is the most interesting and characteristic feature of the syndrome. The red blood cells and the hemoglobin are normal. During the first few days of the disease, the white blood cells are in normal numbers, or there may be a slight leukopenia. Then suddenly comes a leukocytosis of from ten to thirty thousand with both a relative and absolute increase in the mononuclear cells. While this leukocytosis is due in part to an increase of the so-called large mononuclear and transitional cells, it is largely due to a lymphocytosis composed chiefly of cells of a pathological type. We therefore find in these blood pictures three types of mononuclear cells:

(a) The small mononuclear leukocyte, identical with the small lymphocyte of normal blood.

(b) The large mononuclear leukocyte identical with the large mononuclear and transitional cells of normal blood.

(c) A mononuclear cell not commonly found in normal blood, and which predominates and is the one of interest.

This cell may be described as larger than the small lymphocyte, with an oval, kidney-shaped, lobulated or Reider-type nucleus which stains deeply. There is a rather wide margin of protoplasm of groundglass appearance, and without definite granules. None of these cells have given the oxydase reaction, and are, therefore, believed to be of lymphoid origin. These mononuclear cells often comprise as high as 60 per cent to 85 per cent of the total white cells. They gradually begin to disappear during convalescence and the differential formula returns to normal, though this may not be reached for some months after the original infection.

Recovery has been complete and uneventful in all cases. We have then a condition characterized by fever, enlargement of the superficial lymph nodes, usually an enlarged spleen, and a marked lymphocytosis, made up largely of pathological cells. In the past, several cases of acute lymphoid leukemia have been reported as having recovered. As a rule a diagnosis of this disease means certain death within two months. One wonders whether these cases of leukemia with recovery were not of the Infectious Mononucleosis group. Whether we are dealing here with a definite clinical entity or not, remains to be shown, though the American writers are almost unanimous in this conclusion. At any rate, a syndrome which may possibly be confused with that of one of the fatal blood diseases certainly merits our attention.

Etiology: Nothing known as yet. Vincent's organisms have been noted in some

of the cases, but they are probably not the ones responsible for the symptoms.

Pathology: In those cases in which biopsies have been done, the most common finding has been that of hyperplasia of the lymphoid tissue, some pathologists stating that it differs only in degree from that found in acute lymphatic leukemia. In one case the pathologist suggested that it might be a Hodgkin's gland in an earlier stage than had been studied before, and in two cases reported from New York City, it was thought that the sections resembled Hodgkin's somewhat, but the observers were unwilling to make such a diagnosis.

Up to 1922 between thirty and forty cases had been reported, and since then several others have appeared in the literature. Longcope, who reported ten cases from New York, gives the following account of these earlier reports:

"Turck, in 1907, recorded three such cases that have frequently been alluded to in the literature. One case with angina and glandular enlargement resembled an acute leukemia with recovery. Marchand recorded a similar case in 1913, and in the same year Cabot reported four cases of acute local infections associated with lymphadenitis, in which blood counts showed that the leukocytes varied from 9,000 to 30,000 with a percentage of lymphocytes varying from 67 per cent to 82 per cent. A year later, in 1914, Hall recorded an instance of what he believed to be acute leukemia with recovery. The disease occurred in man, aged 23 years, and was characterized by fever, tonsillitis, enlargement of the lymph nodes and spleen, a leukocytosis reaching 35,000 with 89.6 per cent of mononuclear cells. There was complete and uneventful recovery. Deussing later reported three cases of diphtheria-like sore throat in boys associated with a lymphocytic reaction. In these cases also there was fever associated with enlargement of the lymph nodes and spleen, and a leukocytosis varying from 11,000 to 19,400 with 52 to 87 per cent of mononuclear cells. Recovery occurred in all three instances. In 1920 Sprunt and Evans reported six similar cases, all of which presented much the same clinical picture."

An account of some of the earlier cases described by Sprunt and Evans may be of interest. The first occurred in 1913, and was that of a young woman, age 23 years, a medical student, who was admitted to the hospital October 24, complaining of headache and backache. She had been feeling bad for several days, but was not sick. The day before admission there appeared suddenly an occipital headache and chilly sensations. Physical examination on admission showed : T. 102, P. 80, R. 26. She was a little dull with flushed face, slight conjunctivitis and photophobia. There was some slight abnormality of breath sounds, general tenderness over the abdomen, but no resistance or spasm, palpable right kidney, and the liver was 2 cm. below the costal margin. The spleen was not palpable. The next day there were chains of discrete tender lymph nodes in the cervical triangles. A week later a pharyngitis appeared and the lymph nodes of the neck and axillae increased in size, some impairment of the percussion note over the manubrium, and the splenic dullness extended nearly to the costal margin. Repeated examinations had been made for malarial parasites and on this day for the first time an abnormal differential formula of the leukocytes was noted, there being a well marked lymphocytosis. On November 4 the white blood count reached its highest point, 17,500 and the cervical nodes had increased in size. Two days later the temperature had fallen almost to normal and subjectively, the patient was much better. She was discharged November 18, and the spleen, which had been palpable on the 10th, and the cervical and axillary glands were still enlarged. At this time the leukocytes numbered 9200 and the lymphocytes 65 per cent.

Laboratory Data: There was no sputum. Throat culture showed only the usual flora. Urine and stools normal. Tuberculin test negative. X-ray of chest revealed nothing unusual. All blood examinations for malaria negative. Blood cultures and Wassermann negative. A chain of lymph nodes was re-

moved from the neck. One was ground up in salt solution and injected into the peritoneal cavity of a guinea-pig with negative results. Cultures of these nodes gave no growth. Sections for histological study were reported to resemble somewhat those of lymphatic leukemia, but no such diagnosis was returned.

At the time the report was made this patient had been under observation for six years, with frequent blood examinations. In January, 1914, the polymorphonuclears and mononuclears were about equally divided. During this same month the patient had a mild tonsilitis and it was found that her blood showed the usual polymorphonuclear reaction to such infections. One year later her health was excellent, the lymph nodes just palpable, the spleen seemed of normal size and her blood picture was normal. The other cases differed from this one only in degree. Several of these cases were followed for several years and showed nc evidence of blood or glandular disease. Their conclusions are that:

1. "In addition to the mononuclear leukocytosis seen commonly in children, one may encounter occasionaal a mononuclear leukocytosis in adults in reaction to an acute infection."

2. "The mononuclear leukocytosis in adults in reaction to an acute infection is not a simple lymphocytosis, as in children, but is made up largely of pathological forms, probably all of lymphoid origin."

3. "Among these cases in adults, there occurs a group with symptoms and signs so much alike that they may be considered provisionally a clinical entity."

4. "When first seen during the febrile period, especially in the early stages, these cases cannot with assurance be differentiated from leukemia; but the subsequent course makes the diagnosis clear."

5. "The prognosis, so far as may be judged from a series of six cases, is good."

Some observers who have described cases of infectious mononucleosis have assumed that it is identical with the so-called glandular fever of children. This disease as first described by E. Pfeiffer in 1889 under the name of "Drusenfieber," was characterized by a short febrile course, enlarged and tender cervical lymph nodes, and a tendency to occur in house epidemics. In 1896 J. Park West reported an epidemic in eastern Ohio where 96 cases appeared. He describes a febrile disease lasting from 9 to 27 days, accompanied by enlarged cervical nodes, often other superficial glands as well, some cases with abdominal tenderness and frequently with enlarged liver and spleen. Upper respiratory infection present in some cases, but not in all, and recovery the rule.

In 1923 Tidy and Daniel reported an epidemic of glandular fever in a school for boys in England. There were 24 cases out of a total of 30 pupils, ages ranging from 8 to 13 years. The incubation period appeared to be from 10 to 12 days. There was moderate fever, none over 103 F., without rashes, rigors, sweats or cough. There was glandular swelling, greatest in the neck and at first unilateral, abdominal pain in several, no tonsillar exudate. The spleen was enlarged in only one case, and here it was later found that a second factor was responsible. The blood showed no degree of anemia, the leukocytes ranged from 5,000 to 35,000 with an average of 9,000 to 15,000. An occasional case showed a polymorphonuclear increase, but most showed 30 per cent to 45 per cent lymphocytes, with one case of 65 per cent. Their conclusions were that glandular fever is a clinical entity, that it is identical with infectious mononucleosis, the latter being sporadic cases of the former. It is of interest here to notice that in 1921, Morley, who reviewed the literature, could find no report up to that time of a full blood count in a case previously diagnosed as glandular fever.

In 1925 Guthrie and Pessel described an epidemic of an infectious disease in a school for boys during the fall of 1922. Among 500 boys, ranging in age from 13 to 18 years, there were 300 cases, chiefly among the younger pupils, but of 60 masters nurses and physicians, none were infected. They describe a prodromal period of two or three days with sore throat, then sudden onset with fever, chills, malaise and prostration. Most cases showed a conjunctivi-

tis, throats dry and granular from swelling of the lymphoid tissue, enlarged spleens in almost all the bed patients, and by the end of the febrile period enlarged glands, the cervicals especially, but practically all superficial lymph nodes involved, including the epitrochlears.

Their blood examinations revealed white counts of from 12,000 to 15,000 with polymorphonuclear increase in the early febrile period, the count falling to normal or below with the fall in temperature, and then a lymphocytosis which persisted as long as the glands remained enlarged. There were no instances of nephritis, suppurating glands or other complications. Their conclusion was:

"In no instance did study show a picture of infectious mononucleosis, but this may have been missed as laboratory facilities, and the large number of patients prevented systematic blood studies." They refer to the question of whether infectious mononucleosis is merely a sporadic case of glandular fever in a young adult, and offer the suggestion that the latter may be the effect of milder attacks in epidemic form among younger people, producing a different effect upon the blood.

American pediatricians no longer appear to believe that glandular fever is a clinical entity. Howland and Holt scarcely refer to it in their text-book. Gerstly writing in the new Abt's *Pediatrics* says: "Pfeiffer's glandular fever is no longer considered a specific glandular disease. It is now considered the usual form of grippal infection associated with a marked adenopathy. Probably just a naso-pharyngitis in a lymphatic child. It occurs in school children during the winter months when repeated respiratory infection is so common. In summer children are free from it." Griffith, in his text-book, describes this condition under the title of "Acute Epidemic Infectious Adenitis," and says that he has not been convinced of its existence as an independent infection, but thinks it to be only a symptom appearing in the course of a number of other diseases, such as grippe or any epidemic occurrence of inflammation of the naso-pharynx, and is best considered as a variety of acute simple lymphadenitis.

It seems justifiable to make the following observations and conclusions.

1. A syndrome has been described which has the following clinical features: A rather gradual onset with febrile course of from two to four weeks, cervical adenitis, and usually a general glandular enlargement, palpable spleen in 50 per cent or more of the cases, often some pharyngitis which is rather a late symptom, no secondary anemia; so far has been found only in young adults; during the lymph node enlargement is characterized by a marked leukocytosis which is due largely to an increase in lymphocytes and these of an atypical character, and that recovery is invariable and without complications.

2. It probably is not identical with the so-called glandular fever.

3. That while an absolute mononucleosis may be produced in adults by such conditions as typhoid, pertussis, malaria, Malta fever, and by intoxication from certain drugs, these show only a moderate increase, and do not produce the atypical lymphocytes which characterize infectious mononucleosis.

4. That so far it has not occurred in epidemic form.

5. Has been mistaken most often for tuberculosis, Hodgkin's disease, and leukemia.

6. No case thus far reported is known to have later developed leukemia.

7. That it is a definite disease entity.

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DISCUSSION

DR. S. L. CHERRY, Clarksburg:

Dr. Wylie's paper is very interesting, because it brings to us a new subject and one

which is so little known to most of us that we shall greatly profit by what he says if we remember and carry home with us his description. It is evident from what he says that this is an infectious disease, starting in the respiratory tract and spreading throughout the system. It is of a mild nature. So far as treatment goes and also so far as prognosis is concerned, we have little to do. The only trouble we have is in making a correct diagnosis.

Dr. Wylie spoke of the blood examination in these cases. When you do find a lymphocytosis in the blood, never accept that on one count, but always check it up. If we find a lymphocytosis, we may be dealing with any one of a number of diseases; for instance, in whooping cough there is a tremendous lymphocytosis. Also, there may be lymphocytosis in tuberculosis, typhoid fever, and appendicitis. When the lymphocytosis drops, we may get a high leukocyte count. It is very important, therefore, when we get a case of apparent infectious mononucleosis, to be sure we are not dealing with some other disease. We should try every means before coming to a conclusion. The most dangerous point, however is that we should not call these cases cases of acute or chronic leukemia. Blood examination does not help us at all.

The doctor mentioned the fact that some of these cells take an oxydase reaction and that that shows that they are abnormal. As a matter of fact, these cells are bone-marrow cells.

Now, from the clinical standpoint we have to look for help in diagnosing these cases, and the best clinical help is time. When we run across a case showing mononucleosis, we have to rule out other conditions, and we have to take our time and wait before ruling it out. The count in these cases, by the way, is never very high. There is a tendency for the count to drop instead of rising, whereas in well marked cases of leukemia the tendency is for the count to go high and stay high.

DR. C. W. WADDELL, Fairmont:

That such an excellent treatment of a valuable subject should have so formidable a name and should be so ill-timed is extremely unfortunate, I think. Both the hour, which is about twelve-thirty, when one's interest in scientific matters begins to lag a little, and also the name have tended to decrease the number present. Many doubtless thought this would appeal only to laboratory workers, when as a matter of fact it should appeal to men in general practice and also the pediatrists, I think, if not to the surgeons.

One of the very interesting things I noticed in reading this paper was an observation that practically all our knowledge of this syndrome has come from attempts at differential diagnosis—the attempts to put this syndrome into some other classification. It is probably true that this syndrome is not so very common, and for that reason it is all the more important that we should know more about it. If we keep on the lookout for rare conditions, the common ones will take care of themselves. So far as I know, there is no systematic reference to this subject in any of the standard treatises on medicine. Either they omit it entirely or refer only to one particular phase of it, which I think is very unfortunate. For that reason I think we are especially indebted to Dr. Wylie for presenting this subject in its entirety. This presentation is the most nearly complete I have seen, as it brings up all aspects of the subject; and I think it is a very valuable thing for this society to have had.

DR. R. A. IRELAND, Charleston:

This paper is of a good deal of interest to me, because I think I owe the profession an apology for having published in the *Journal A. M. A.* in 1915, under this heading, the report of a case of lymphatic leukemia with apparent cure. At that time we had nothing in the literature on this subject, which has been so ably presented today. When I had a case, a boy 9 years old, who presented the striking features of a case of lymphatic leukemia, with a count of ....., which was verified by Baetjer, of Hopkins, I felt justified in presenting it to the A. M. A. Everybody who talked to me about it said they thought me mistaken, because

lymphatic leukemia is never cured. I said I did not suppose it was, but I did not know what else to call that case. It has just occurred to me, since this subject has come before the profession, that perhaps the case I had, which I saw first in 1913, belongs in this category. That boy has grown to be a robust young man and is in perfect health at this time. So it was probably not a case of lymphatic leukemia but rather, perhaps, a case of mononucleosis.

DR. WYLIE, closing the discussion:

The last speaker, I think, added a great deal to the paper, and I thank him for mentioning that case. It brings out just the thing I wanted to bring before you. There is not a great deal known about this; but, since it is a condition that might be confused with leukemia, it is certainly valuable for us to study it and find out what we can. It does seem to be increasing, and if there is a possibility of its becoming epidemic later it is certainly worth while for us to find out all we can about it.

OBSTETRICAL COMPLICATIONS *

By JAMES A. RIEDY, M. D.
Monongah, W. Va.

IT has been said that there is nothing new under the sun. However, it would be extremely difficult to impress such a statement upon the general practitioner of medicine after almost a quarter of a century of service, especially if he has had much experience (as he undoubtedly has had) in the field of obstetrics. With your permission, let me present a few of my experiences with unlooked for complications in obstetrical practice.

Umbilical Cord Six Inches

Normal head presentation, and labor progress good, but when child was delivered, to my surprise, the cord was uprooted, and a living fountain of blood coming from the crying baby's abdomen, gave me a shock long to be remembered.

We puckered up the skin, and thereby stopped the blood, temporarily at least, and not knowing what else to do, the nurse was requested to tie the gathered up skin, with umbilical tape, and thus a temporary condition was made permanent. In ten days the skin sloughed off, leaving a rather raw surface, which scarred readily and instead of the usual depressed scar a level smooth scar resembling the average vaccination scar, remained. A rare mark of indentification, indeed, by reason of its location, and the absence of the well known umbilical scar.

The cause of this accident became evident when on examination of the cord it was found to be only six inches long.

I have not had any such case before or since, and how to avoid such a misfortune is a question, and what is best to do, when so confronted, is another one.

During the writer's earlier practice we cut the cord between the two ties. Now and then a hurry call, "the baby is bleeding," came in. To me it was rather humiliating saying nothing about the economic loss, to be called upon to correct such a simple shortcoming, yet so vital.

For the last twenty years we have left both ties with the baby. This is much more secure. At least no "S. O. S." the "baby is bleeding," have I received since.

Let the placenta bleed, providing there are not any signs or symptoms of multiple pregnancy, because it facilitates the delivery of the after birth. If it is advisable to tie the cord attached to placenta, do so, but give the baby the benefit of two ties at least.

Placenta Retained Eight Months

After missing three menstrual periods and having all other common signs and symptoms of pregnancy, Mrs. H. H. developed a severe hemorrhage. She was

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* Read before the West Virginia State Medical Association, fifty-ninth annual session, Morgantown, May 27, 1926.

advised to go to bed. She remained there one week.

Then she continued her household duties, taking care of two children and husband, living in a four-room cottage. She had no more hemorrhages, no headache, no pain anywhere, felt good. Pregnancy apparently developed. She made all preparations for her child birth, but labor was delayed and finally she called the doctor and wanted to know why she did not go into labor. She had noticed that her abdomen was getting smaller.

Bimanual Examination Revealed.

There were no signs or symptoms of pregnancy. Two months later she moved her household furniture to another cottage. The following day she developed severe labor pains, and show of blood—after four hours of hard uterine contractions a placenta about the size of a small afterbirth, at full term was delivered. There was, however, a complete absence of the amniotic sac and cord—the afterbirth showed not a single sign of decomposition.

No doubt the fetus was lost at the time she had her hemorrhage but the outstanding fact is that she retained the placenta eight months after she lost the fetus, and all that time enjoyed good health.

Is it possible to recognize such a condition when the local signs and constitutional symptoms are negative? How is such an unusual condition explained?

Simple Satisfactory Method of Dealing with Retained Placenta at Home in Emergency

We find this is met with usually about the third month of pregnancy. The fetus as a rule is expelled and lost but mother is in a helpless condition—bleeding profusely and continually. She fails to cast off the placenta—on examination is often times found lodged in the cervix.

No general anethesia is given but a hyperdermic of morphia. The reason for this is that most patients are exsanguinated, pulse weak and thready, and at times not palpable. When patient is unconscious not even a hypodermic of morphia is given os necessary.

During the meantime basins and instruments are sterilized, and patient prepared while in bed for operation. Patient put on table. Field of operation protected with four towels saturated in bichloride of mercury. Sponges of cotton saturated in lysol solution are used for mopping out vagina.

Few instruments are needed—speculum, small and large dilators, tenaculum, placenta curette, or "screw" as we prefer to call it, and scissors.

The placenta is usually found lodged in the cervix. It is easily removed, after the cervix is dilated with the screw curette. And as a precautionary measure a small drain of iodoform gauze is put into the uterus, through the inner ring, and not against fundus, and the vagina is packed with iodoform gauze.

This work is accomplished in about one hour and thereby an alarming situation is overcome to the satisfaction of patient and surgeon. We have for twenty-three years employed this simple method at home in these emergencies, without the loss of a single one.

I make mention of this work because of its simplicity and satisfactory results.

Unusual Case — Thirteen Babies, Thirteen Attacks of Purperal Fever by One Woman

Thirteen babies and thirteen attacks of puerperal fever, due to retention of amniotic sac, is the extraordinary history of Mrs. J. F., who is living today, age forty-eight, and having the facial appearance of the average married woman at the age of thirty.

She gave birth to her first baby at the age of 18. According to her report, she became ill with headache, chills, and high fever. The attending physicians gave her uterine douches repeatedly. She remained in bed two months.

Two years later her second baby was born. Fever developed as before. Douches

were given; course of disease about same.

Following third baby, childbed fever developed and lasted two months.

When her fourth baby was born, it fell to the writer's lot to be the attending obstetrician—normal birth. Some difficulty experienced in getting placenta, and on examination found little or no amnionic sac. Headache and little fever second day; severe headache and more fever third day; severe headache and fever 104 and above the fourth day.

We prepared for uterine irrigation. Speculum introduced and to my surprise not any discharge from the uterus visible, nor any odor detected. The uterine dilator was now introduced and the uterus opened. A profuse and most highly offensive discharge flowed freely. An intra-uterine irrigation with normal salt solution was given until solution returned clear—no drain was put into uterus.

Temperature normal following day; headache and little fever second day; headache and more fever third day; headache and fever 104 and above on the fourth day. We proceeded to give her more intra-uterine irrigation with normal salt solution and were again surprised to find no discharge in vagina and not any odor. Cervix closed up tight. After opening up uterus with uterine dilator, a discharge appeared, profuse as before and equally as offensive. After thorough irrigation with normal salt solution an iodoform gauze drain was put through cervical canal into uterus, and a pack in the vagina.

Temperature normal the following day; headache and little fever second day; severe headache and more fever third day; severe headache and fever the fourth day. Cervix, however, remained open, and drainage continued, but fever remained well up until at end of fourth week and then gradually came back to normal at the end of six weeks.

This woman gave birth to nine more babies, and each time the same condition existed. Signs and symptoms differed only in degree and not in kind.

Striking features of this case are:

1. Adherent sac retained after each childbirth.

2. The complete closure of cervix on the fourth and eighth days, thereby obscuring all signs of the real cause of her highly critical and alarming condition.

3. The prolonged fever after all signs of retained sac had disappeared.

What can one do, besides irrigation, drainage, and supporting constitutional treatment?

Atresia of Vagina.

Called to see Mrs. T. S., age twenty-five, Italian, in labor at full term. Vaginal examination revealed an almost complete closure of vagina, not even could the index finger penetrate what seemed to be an opening in this abnormal obstruction.

A general anethesia was administered, and patient prepared for operation. The abnormal tissue was cut posteriorly, anteriorly, and right and left laterally. This tissue was tough and cartilogenous in structure, about the thickness of my index finger. One could easily tell when the abnormal tissue was completely severed by reason of its firmness, and inelasticity.

Head presentation, labor progress good and normal delivery. Her puerperium was uneventful. One and a half years later she gave birth to her second baby, and the baby was born in the presence of our welfare nurse before the doctor arrived. This convalescing puerperium was also uneventful.

Such a condition must be rather unusual, and fortunately so.

Eclampsia.

All our cases of eclampsia pre-partum were delivered as soon as possible, by means of dilatation and podalic version and all babies were dead when delivered, and all the mothers were saved. Dr. H. S. Kiester, of Fairmont, read a very interesting paper at one of our tri-country meetings, in reference to eclampsia, how to stop convulsions

and save the baby as well as the mother.

We have in our community two mothers living, having living children delivered by Cesarean operation because of eclampsia.

The point for discussion—What is the best course to pursue in prepartum eclampsia:

1. Dilatation version.
1. Cesarean operation.
3. Or the method Dr. Kiester referred to.

Conclusion.

In our field covered by my associate Dr. Lyndon S. Smith and myself, an average of 125 babies, at full term, are born per year. During the past 23 years, we have had one death due to post-partum hemorrhage; one death due to scarlet fever developed during puerperium; one death due to carcinoma of uterus, baby delivered by Cesarean route; one death due to septicemia following Cesarean operation; and two deaths due to puerperal infection.

I am much indebted to our welfare nurse Miss Maude Lindsay and to my associate Dr. Lyndon S. Smith.

Note:—Discussions follow next paper.

OBSTETRICS VIEWED BY A GENERAL PRACTITIONER *

By JOSEPH L. MILLER, M. D.
Thomas, W. Va.

THIS is a day of preventive medicine and human conservation. Governmental and private organizations are bending enormous energies toward teaching the truth of the old adage that an ounce of prevention is worth not only one, but many pounds of cure. It is an indisputable fact that the majority of medical men, though not connected with these various agencies, are giving their best efforts to further the ideal of a strong, healthy race, free of defects and disease.

It seems to me that the very beginning and most important part of this work has to do with the oldest branch of medicine—obstetrics, in its broader sense of prenatal, natal and post natal care of the mothers and babies. However, at this time I wish to discuss only one phase of the subject—parturition; and why apparently there has been no marked improvement in the obstetric work of the general practitioner of today over that of yesterday.

After more than a quarter of a century of experience in small town obstetrics, the conclusion is forced upon me that we as general practitioners are falling far short of the ideal in this branch of our work, and even of what the public has a right to expect in the present state of advance in medical science in general; and that is, in the last analysis, the fault largely of the teaching staffs of our medical schools and clinics. For many years it has been my peculiar province of having associated with me at all times three or more young physicians (most of them soon after completing their college and hospital training), who have helped me, even more than my own reading and visits to the medical centers, to keep in closer touch with the modern curriculum; and, generally speaking, I note in them as perfunctory an interest in the subject, and as woeful lack of knowledge of the essentials of the normal or slightly complicated case of parturition as are to be found in many of us of the older generation who are the subjects of much criticism in the teaching centers of obstetrics.

As I see it the failure of the undergraduate instruction in obstetrics may be summed up as as follows:

First. Failure to thoroughly ground the student in the fundamentals of normal and

mildly complicated cases of parturition and their successful handling.

Second. Failure to inculcate in him a lively interest in this branch of his profession and a realization of its tremendous importance.

Third. In teaching him a technique that, when he follows it, often leads to more grave errors in diagnosis than he might otherwise make, and in some communities makes him taboo for this class of cases no matter how well qualified he may be to take care of them.

I am not alone in thinking the fault lies largely in the instruction received during his undergraduate days, for some of the teachers themselves, realizing that matters are not what they should be, are discussing the problem and placing the blame on the teaching staffs. Dr. George Lee, assistant professor of obstetrics in the University of Chicago, in an interesting and valuable paper published in the January number of *Surgery, Gynecology and Obstetrics*, says: "Information from men of many institutions corroborates the diagnosis of widespread deficiency in obstetrical preparation, whatever the school concerned. The blame cannot be laid upon the students since they show a constantly higher standard of preliminary preparation and mental capacity, and so it must be placed upon the manner and methods of teaching. Perhaps one difficulty may be that to many teachers, all facts seem of equal value. The student burdened by the great multitude of obstetrical facts thrust into his charge, is like the overwrought hen trying to brood too many eggs with the result that few hatch because the number far exceeds her capacity for keeping them warmed to a germinating temperature. Perhaps teaching departments have expanded too rapidly, like hospitals, so that size has outrun organization and efficiency, or else like Topsy, they "just growed."

But whosoever the fault, it seems to me that too many of the graduates of the past decade have too perfunctory an interest in this branch of their work as general practitioners, and apparently are lacking in a proper skill in the management of such cases, though they should realize this is an essential and very important part of their practice. Perhaps this is partly due to the atmosphere of most of our modern medical schools and hospital teaching centers which it seems to have a tendency to make specialists of all their graduates. So that the young "M. D." leaves school imbued with the idea (as soon as he is financially able), of devoting himself to surgery, internal medicine, laboratory work, or some other one of the innumerable specialties now with us; that years he puts in in general practice, except as they touch his particular interest, are but marking time until he can achieve his ambitions—not realizing that a broad, thorough experience in general medicine is the best foundation upon which to build any specialty.

Probably the root of the matter is that too much of the time allotted the teacher of obstetrics in the university is spent in instructing the student in many phases of the work that are as closely allied to the medical and surgical fields as to the obstetrical and which should be given in those departments; in instructing him in the technic of the major obstetrical operations and rare pathology that might better be left to the postgraduate schools; and in giving him a mass of facts and hypotheses, interesting of themselves, but too complex and voluminous for the student to properly evaluate for himself. The result apparently is that by the time this is done there is too little time left to thoroughly ground him in the diagnosis and successful management of the normal case of labor and the moderately complicated ones, which will for the most part constitute his practice in midwifery. That my limited observation is true would seem to be corroborated by Dr. Lee, who says: "The graduates of all our schools seem to have learned lists of facts without having discussed their interrelationship or usable value."

Some of the routine procedures now taught I think are very objectionable for the general practitioner, no matter how satisfactory they may be in the maternity wards.

Consistently carried out they lead to more frequent errors in diagnosis than the older methods they are replacing and experience has shown they are no safer than the older ones properly conducted. In some communities they even render the young physician persona non grata in the home of the expectant mother, so that he is employed for confinement cases only where the parents can not do otherwise, unless he changes his methods with nothing but his own common sense or the instructions of some old neighbor, whose own technique is probably faulty and much below the standard that could be imparted at the present time, if it were done by the teachers themselves. Among these routine procedures I wish to mention two or three.

The *obiter dictum* that all examinations of the parturient patient should be made per rectum is one of the most objectionable. It can never give the definite information as to the condition of the cervix, presentation, etc., as does a vaginal examination, hence leads to more frequent and graver errors in diagnosis. It is more repulsive to all classes of patients, and as said before is no safer than a vaginal examination properly made. Nor can I see how the routine wipe with sterile gauze will free the perineum of masses of germs the finger has dragged from the bowel; and should the exigencies of the case later require a vaginal examination, I think, through his subconscious sense of safety engendered by his routine rectal examinations he is more likely to be less careful in the preparation of his hands and gloves than the man who makes no rectal examinations. A friend of mine from Johns Hopkins, who routinely makes rectal examinations, says it is really only a lazy man's proceedure, and that it does undoubtedly lead to more frequent and graver errors. That only the day before we were talking he had a forceps case that he would have terminated at least two hours earlier had he been making vaginal examinations and so not waited for beginning exhaustion. A statistical study of my own records of more than two thousand cases and of those of some of my neighbors who do *good* obstetrics, but who nevertheless do "vaginal obstetrics," at all times trying to keep an "aseptic conscience" (though I grant you this is only a relative term as applied to obstetrics) convinces me that even with the imperfect degree of surgical cleanliness possible in these cases and under the apparently impossible conditions met by the general practitioner obstetrician in some homes, that when necessary the vagina and uterus itself may be invaded almost with impunity. That our morbidity and mortality rate will compare favorably—yes is even better than that of the followers of the ultra modern practice.

In proof of the statement of grosser errors in diagnosis through faulty examinations I offer a few cases from my own experience, and quote again from Dr. George Lee and Dr. Joseph B. DeLee. Some years ago I was called in consultation with a man who made only rectal examinations. The patient had been in labor many hours with no apparent progress and beginning exhaustion. A large heavy walled abdomen prevented any definite information from external examination. His diagnosis was thick, slightly dilated cervix, large head unengaged. A vaginal examination disclosed almost complete dilatation and a transverse presentation. In another case and by another man I was called two hours after delivery to assist in a case of supposed "retained placenta with threatened complete prolapse of the uterus." I found a doubled up placenta lying in rather a capacious vagina, so that his Crede expression before he became alarmed had failed to protrude it through the vulva. Had this young man not been so thoroughly impressed with the idea that he should never make a vaginal examination at the time of confinement, particularly post-delivery, he would have saved himself much chagrin. A certain type of consultant, familiar to all of us in the smaller communities, would have taken great delight in wrecking the reputation of these embryo obstetricians.

Dr. George Lee says regarding some of his experiences:

"When a patient arrives at the Cook County Hospital in the third day of active

labor, with a diagnosis of carcinoma of the cervix (later not confirmed by laboratory findings), with the membranes ruptured for 28 hours, with signs of fetal life not obtainable for at least 24 hours (the fetus being later found macerated) with only 2 centimeter dilatation of the os, with a maternal pulse rate of a hundred at entrance which continues to rise thereafter, and with a fetal presenting part still above the inlet, we may, I think be justified in speaking of this as a neglected case. If such a case were received from the hands of a midwife or indeed from a general practitioner we would use it to illustrate oft-quoted evils, but she was received after being three days in the care of a well organized teaching dispensary.

"Again from another teaching clinic a patient is received 24 hours in labor with membranes ruptured, but with the os still far from being completely dilated, with a history of attempted operative delivery by forceps, although the presenting part is still above the inlet, with no valid reason for operative interference is found after her admittance except this unsuccessful invasion of the birth canal, and when she delivers herself spontaneously about four hours later with no indication for interference in the intervening time, should we be satisfied with our teaching? When a patient after three previous deliveries cared for by midwives without noticeable disability resulting, passes through a teaching clinic from students upward, finally to emerge from the hospital without her uterus, because a laceration in the introitus from an attempted forceps extraction had caused hemorrhage and dismay, should not each of us become more diligent in acute observation and analysis, confer about possible improvement, and cease throwing stones at those who conscientiously question dictums, who want to be shown the validity of new methods before abandoning time tested ones. When recent graduates have frequent unattended births, 'precipitate labors,' as they delight to call them, because they cannot or do not judge aright the rate of progress in cases relatively normal in all factors; who show much greater familiarity with infrequently needed procedures of still disputed worth than with the simple maneuvers almost constantly required, does it not behoove all of us to look for adequate correction of such faulty results?"

Dr. Joseph B. DeLee says: "The examples of terrible mistakes referred to by Dr. Lee I can match by relating corresponding and even greater horrors that have occurred in the practice of men in our midst at the hands of men who have been practicing obstetrics for years and who enjoy the title of professor. We have to improve our teaching and we should spend the time teaching normal obstetrics as well as pathological."

Mind you these cases came from the hands of men supposed to know the subject thoroughly and to have every facility at hand for properly conducting them. Then how much more necessary it is for our general practitioners in the rural communities of the mountains of West Virginia or the plains of Iowa, with no hospitals just around the corner and but limited assistance at hand to know when not to meddle with the workings of nature in a normal case or convert a simple pathological condition into a gross one.

Another procedure strongly objected to by all patients not used to hospital ways is the shaving of the pubic hair. So far as I can see there is no difference in the end results of shaving or not shaving except in the feelings of the patient. As a neighbor of mine who is to discuss this paper, remarked, if such were intended there would be a physiological alopecia just as there is a development of the breasts and colustrum during pregnancy. Another friend told me of an acquaintance of his who never did get the obstetric work he was entitled to because he shaved the first few cases he had in that community.

Probably the most harmful of all procedures to the prospects of the new doctor in a community is the delivery of all obstetric cases by sight. *Per se* there is of course nothing wrong with this method and it has some advantages. But in the majority of homes without the aid of plenty of sterile drapes an towels, and trained nursing assistance, where the patient is exposed oftimes for hours to the gaze of the doctor,

midwife, nurse, and visiting neighbor "grannies" with their clacking tongues it does do much harm; for after two or three cases of this kind the new doctor will be absolutely boycotted and maternity cases rightfully his will get into the hands of some ignorant old midwife or old Dr. So and So who probably graduated when the teachings of Lister were in their infancy, or who learned but little while in school and through laziness or lack of interest has not advanced any since, but who according to popular opinion still has "some sense of decency." In one case I know of it also almost cost the doctor his reputation as a diagnostician. Through rectal examinations he had made a diagnosis of a vertex presentation, also stating the child would have a large swelling on its head from pressure but which would leave in a few days after being born. Imagine his surprise and consternation when the buttocks and edematous scrotum of a male infant emerged from the vulva in full sight of all present. He partially saved the day by assuring that it had been some time since his last examination, the youngster had done a "flipflop and swapped ends" on him.

In view of such gross errors in diagnosis it occasions me no surprise when I read of the terrible catastrophes occurring in the practice of some men when they use pituitrin, whether they be among the younger and supposedly best equipped men of today, or us older ones from the schools of yesterday. Obviously there is just as much reason in blaming the drug for the accident as there would be in blaming the loaded rifle for an accident when it has been placed in the hands of a child. The only case I have personally known of a ruptured uterus occurred in a case attended by a friend of mine who was a graduate of one of our very finest modern schools, who made only rectal examinations and delivered by sight. The case was in a primipara, 38 years old, possibly with an undiagnosed rigid cervix or a contracted pelvis. To offset this, I also know of a case in the hands of one of my own generation, but of the homeopathic school, who when called to see a multipara after several hours labor, but with a cervix that would admit but one finger, gave a c.c. of pituitrin and then left to drive eighteen miles to make a call, telling the family that she would be in condition to deliver when he returned. Through his failure to elicit her history or to recognize from his examination the fact that she had a contracted pelvis; that she had out of several confinements but one child delivered alive, and that a seven months miscarriage; that other attending obstetricians in previous confinements had strongly advised a Cesarean operation and sterilization; and that an undilated cervix even in a case otherwise normal is absolute contraindication for the use of pituitrin, he almost cost her her life. Fortunately a prompt removal to the hospital by another physician and a Cesarean section saved both mother and child.

In conclusion let me urge those of us who are already out of school to take a greater interest in this branch of our work and to make an honest effort to add to our knowledge and overcome our faulty diagnoses and technique. Let those who are teachers of obstetrics endeavor to build in the next generation of practitioners a firmer foundation of a more thorough knowledge of the mechanism of normal parturition and of the commoner abnormal conditions with which they will have to deal in the majority of their cases; to implant in the student's mind an "aseptic conscience" and teach him a technique that will render his work easier and not more difficult; to impress him with the fact that obstetrics in its varying phases, prenatal, natal and postnatal care, is the most important part of his work as a general practitioner, ever meriting his most careful and diligent attention. Then we shall see a real advance in this branch of medicine. Or as that master obstetrician, DeLee, sums it up: "It is simply that practitioners do not know enough obstetrics. They have to be taught more fundamental obstetrics and less of the high spots. The principals have to be correlated with technical obstetrics. We have to improve our teaching, and we should spend the time

teaching normal obstetrics as well as pathological."

DISCUSSION

DR. H. H. BOLTON, Pierce:

In regard to Dr. Riedy's paper, I would say that he has been very unfortunate—or fortunate—in having these unusual cases. I hope I shall never have any such, and I hope he will not have any more.

As to retained placenta, I think if you will leave them alone and not be in too big a hurry it will be expelled without any trouble.

As to Dr. Miller's paper, perhaps it is rather fortunate we have not a four-year medical school here, or we might get in an argument with some of the teachers. In obstetrics I am rather a fundamentalist. I thoroughly agree with Dr. Miller in all phases of his paper. The trouble today is that students are not taught obstetrics as they should be. To him every confinement case is a complex problem; he is not taught that the majority of confinement cases are normal. Students are taught more of serious complications than to conduct a normal labor as it should be conducted. I think more of them get into trouble because of looking for trouble than because of any real trouble there.

As to vaginal examinations, I never intend to do anything but vaginal examinations as long as I have the success I have had. I have been practicing ten years and have not lost a mother. I do not see any reason why a man should not make vaginal examinations if he has any surgical conscience at all. Rectal examination is rather repulsive to the patient.

I was rather amused at a meeting of a medical association which I attended several years ago. One man said he could not deliver a case without a trained nurse. I thought then he ought to have a year's sentence in West Virginia, when I thought of how we deliver babies here. A lot was said about shaving the pubic hair. Why bother about that? It is not absolutely necessary.

Then, about pituitrin. The product put out now is almost fool-proof. I always carry it with me and almost invariably give it at some stage of the labor and have never yet had to go back for a postpartum hemorrhage.

DR. L. H. HOWARD, Fairmont:

I am very glad to have had the opportunity of listening to these two papers. Surely they are worthy of a larger attendance than we have here. I wish to congratulate the authors of both. Dr. Riedy's shows the gleanings of rich experience. Dr. Miller's shows that he has given serious consideration to what the medical profession, particularly the teaching members, are doing today.

I am sure we are all agreed that the use of pituitrin is a valuable aid to the practitioner in the field of obstetrics, it is surely a most injudicious habit to use it indiscriminately from day to day. I recall a case I saw a few years ago, a woman who was my former patient. She was attended by a midwife. I was called to her and found her in a state of shock. A hasty vaginal examination showed a ruptured uterus. She was taken to the hospital and preparations made for laparotomy. Upon opening the abdomen we found a three-inch rent in the uterus. The woman died within a short time.

As to Dr. Reidy's experience, I think he would have saved much trouble if he had, after one experience with retained amniotic sac, sent his patient to the hospital for future confinements and under aseptic procedure carefully removed the amniotic sac.

Regarding rectal examination, I am sure that no one except with a highly trained sense of touch can make a diagnosis of the cervical condition and the presenting part through the rectum.

As to eclampsia, when once a patient is in convulsions, it is my experience that the proper thing to do, and do immediately, is a Cesarean section. In this way I think we can almost invariably save both mother and child, even though it be a month and a half before term.

DR. C. H. MAXWELL, Morgantown:

I would not presume to criticize the teaching of obstetrics in our medical schools, but it seems to me the idea is uppermost in the

minds of the teachers that the doctor can have the convenience of hospital and trained nurse to assist him. These are great conveniences and aids, but not one-tenth of the babies born in our country have the benefit of a trained nurse, much less the convenience of hospital. Most of the women are fortunate if they have the aid of a practical nurse. If our medical teaching does not take these facts into consideration, they are not doing their duty by the students. With improved roads, hospital facilities are within reach of a greater number than formerly, yet it is a fact not fully appreciated by many teachers and practitioners that most families that raise babies are not financially able to have trained nurse or hospital care. "It is a condition, not a theory that confronts us." Medical training is extremely weak at this particular part of the student's life.

The students and medical profession generally lack interest in obstetrics. Most practitioners dislike the work. It is not a lazy man's job. It is not the work for one who does not put honesty and conscience in his work. It is a work that must be done in detail in every instance. It is not to be slurred over, and take chances on good results. It is a work that the doctor should not leave as soon as he ties the cord, delivers the afterbirth, disinfects the baby's eyes, and leave the care of the patients to some granny. It is detail work before and after birth that conserves baby and mother.

"Hands off" is poor obstetric practice. "Let nature have its way" is poor teaching. If nature is to have her way, why have a doctor at all? I doubt if any one who does much confinement work follows out these teachings. If he does, he should change his work. For we know that digital dilatation of the uterus stimulates and strengthens the pains and shortens labor. We know that the stretching of the perineal tissues shortens labor and prevents tears in almost every instance, except in the most precipitate labors the preservation of the perineum can be done. Even in these cases if we have time, by anesthetizing the patient we can slow up the labor, and can iron out the perineum more rapidly, and can conserve it. If we are present during labor let us work for the good of the patients, not sit by, and look austere.

Theoretically "hands off" possibly might be all right. "Let nature have her way" might just as well be applied to adenoids, or diseased tonsils, or clubbed feet, or bowlegs, or defective eyes, or typhoid fever, or pneumonia, or to almost all abnormalities, for "in some way or other the Lord (nature) will provide"; and most people would get along somehow. But the province of the doctor is to aid nature, not watch to see if she does it right. And right in obstetrics is where we can do more to conserve the health of the race than in any other field.

If all the obstetricians in New York and Baltimore and Chicago and San Francisco and London and Paris and Berlin and Vienna and Peking and Timbuctoo should tell me the rectal examinations are the only ones that should be made, I would tell them that was their opinion, and their opinion was founded on fundamentally incorrect and absurd premises. The rectum is not the route of exit for the baby, and is not amenable to any manipulations that could aid the mother or child. Theoretically, I presume, the vaginal route is to be avoided for fear of infection. This is possibly true in some instances. But we should remember that the hands can be made as aseptic in obstetrics as for appendicitis operation. Even with the most elaborate precautions in appendicitis operations there is infection at times. In more than two thousand confinement cases, I have had no case of child bed fever, and no death. And my work has been in every conceivable condition from the highest type of aseptic cleanliness to the most abject squalor and dirt. The outcome has always been good. And no rectal examinations were made. I am thankful that precious few medical schools have so far departed from common sense as to teach the filthy rectal examinations as the only ones to be made.

Another thing that is sometimes advised is to keep the mother uncovered, "so the doctor can see." No one would advise against the exposure of the mother if there were any good that could come from it; but in uncomplicated cases there is no necessity

for it. Diagnosis of presentation, stage of labor, condition of cervix, and perineum are all made with the touch, and can be made just as well under the covers, and sight would not aid one iota. The time may come when our sense of modesty will be such that our wives can lie naked for hours in labor while the doctor and husband and nurse and granny and neighbors can sit around and watch, and not have a touch of shame about them. But that time is not here now, and the doctor that follows it out will have few cases of obstetrics in his work. Besides the uselessness and immodesty of the procedure the mother should be kept warm and comfortable. In fact it is good practice to keep them uncomfortably warm, as it is a well known fact that labor pains are greatly promoted by getting the mother well warmed up.

Again I would say that in my opinion most medical schools devote more time to laboratory technique than they do to practical bedside teaching. The advances have been good in all lines except in obstetrics. Aside from a few agencies we are no farther advanced than thirty years ago.

I shall use more than five minutes' time, as there are two papers and I was asked by both the authors to discuss them.

I have never had an uprooted cord, but no one could do any better than Dr. Riedy. Evidently the traction on the cord caused the skin about the naval to be drawn out enough to allow tying. The needle operation is proper: That is, two needles transfix the naval at right angles, and a tape wrapped beneath them stops hemorrhage. This was the method I used in an adiopathic bleeding when a partial separation occurred three days after birth, using just enough tension to stop bleeding in order to avoid sloughing. I left an extra tape with the nurse with instructions to retie if bleeding commenced again. Bleeding commenced later, the nurse was "afraid", and they sent for one of my good neighbor physicians. The baby was dead when he got there. His advice was to bring malpractice suit for "neglect, indifference and brutality.'" The suit was brought, defended and won. The instigator of the suit had not the temerity to say on the stand that I had done wrong. The jury was out ten minutes. I find one tie of the cord is sufficient if the cord is crushed with hemostatic forceps, but may get bleeding if this is not done. I use inch roller bandage for tape.

It is hard to account for retention of placenta for months, but it is probably due to lack of tonicity or abnormal tolerance of the uterus. I had a case of an unmarried chambermaid who gave birth at one o'clock P. M. in her room by herself, in Pittsburgh, tied and cut the cord, wrapped her baby in a skirt, took the train to Morgantown at three P. M., went to the hotel, stayed all night, next morning, started out to hunt her brother, met him on the street, and went to his room. I delivered the after-birth at noon. I have had cases of retained whole placenta for weeks in miscarriage cases.

In dealing with retained placenta in miscarriages I find that in nearly every case the placenta can be delivered with the finger. If the os is dense, there is little bleeding, and there is no danger in packing the uterus, and waiting. Or give an anesthetic, dilate and give one c.c. of pituitry extract, and the whole operation is over in a few minutes.

In dealing with a case like the one described by Dr. Riedy, it should be remembered that all the retained secundries should be removed. The after-birth should be examined, and if there is any of the sac not delivered, it should be done, even if the whole hand has to be passed into the uterus. The fingers are the best thing to find out what is wrong in the womb. Puerperal septicemia would be rare if the uterine walls are kept dense with ergot and strychnine (personally I give both of these drugs every four hours for several days). In over two thousand births there has been no case of this kind.

Dr. Riedy seems to meet his emergency cases in a most satisfactory manner. Within the last month, two of my mothers had eclamptic seizures, both were sent to the hospital, one delivered by forceps, and one by Cesarean section, and both delivered within twenty minutes of each other. It is needless to say that the surgeons delivered

one, I the other. All the patients lived. I have had only five eclamptic cases, three babies died—all the mothers lived. Hypodermics of verbatum is the sheet anchor in these cases. Lobelia and gelsemium are powerful synergists. The pulse should be reduced to below 70, better into the fifties.

DR. RIEDY, closing the discussion:

In reference to what Dr. Bolton said about letting the placenta alone, it has been our experience that very few women who have miscarriages about the second, third or fourth month are able to expel the placenta. They simply keep on bleeding. In our earlier experience we frequently found women in an unconscious condition because they lost so much blood. Now, we get ready and do the simple operation I have described, and in an hour's time we straighten out the situation, remove the afterbirth, and find it is a great satisfaction to the patient and also a greater satisfaction to the doctor. We used to let the patients go and live in hope, but too often we would be disappointed and they would be found in a very serious condition sooner or later. Once in a while they would help themselves, but we think it is a great mistake to take chances and risk loss of life.

TERATOMA OF THE TESTIS *

By ANDREW J. GOODWIN, M. D.
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SINCE the latter part of the seventeenth century reports of testicular new growths have appeared in the medical literature. Ewing[1] reports that Saint Donat in 1696 described a mixed tumor of the testis in which he recognized embryonal elements of a fetal character, and that later similar observations by various authors, including Prochaska (1803), Andre de Perrone (1833), Velpeau (1841), Verneuil (1855), Paget (1855), Scuftleben (1855), Koslowski (1897), and many others definitely established the observation that hair, teeth, rudimentary eyes, cartilage, bone, brain tissue, ganglion cells, nerve fibers, rudimentary intestinal or bladder structures, and smooth muscle tissue may be present in these new growths indicating that any or all of the primary germinal layers may contribute to their development.

Since these early observations so excellently outlined by Ewing, pathologists have noted these unusual tumors from time to time with the result that considerable interesting literature on the subject has accumulated, advancing theories as to their probable origin. In a monograph on hydatid disease by Cooper[2], in 1845, a description was given of teratoma of the testis. In 1853 Curling[3], classified the growths into cystic, relatively benign, and solid malignant tumors. He was the first to study them microscopically, and observed that cancer may begin in the rete testis. In 1896 Wilms classified tumors of the testis on the basis of tridermic origin, and showed that all the complex tumors of this group arise within the testis. His classification is as follows: (1) embryomas, cystic tumors in which the elements present a somewhat orderly imitation of a fetus, and (2) embryoid tumors or teratomas, more solid growths in which there is no orderly imitation of a fetus.

Wilms was familiar with the preponderance of one element in the tumors, chiefly cartilage or muscle, and found much sarcomatous and carcinomatous tissue in his specimens. Transitional forms between the two groups have been seen, and the intratesticular situation is not constant, as shown by Koslowski, who reports a teratoma situated in the tunica vaginalis.

Pick and others have asserted that one element may so predominate as to suppress or obscure all the others, as illustrated in

* An original article.

ovarian teratomas in which the tumor may consist solely of thyroid tissue. This predominance of one element is also well illustrated in the types of teratoma which Schlagenhaufer identified as chorioma testis. Ewing states that many significant observations led up to the conclusion that this peculiar tumor is analogous to chorioma uteri. Waldeyer, in 1858, observed polypoid masses extending from a testicular teratoma into the pelvic veins, and he mentioned a striking resemblance between these masses and hydatid mole. Breus, in 1878, reported a case in which polypoid masses extended through the veins into the heart, and in 1896 an English commission decided against Marchand's[4] view that chorio-epithelioma is distinctly a tumor occurring in the female in connection with pregnancy, chiefly on the evidence presented by Kanthaek and Pigg of a testicular tumor showing identical structures with those of chorio-epithelioma.

A series of testicular tumors had been described in the French literature under the term "sarcome angioplastique" which bore a striking resemblance to hydatid mole, and in 1902 Wlassow pointed out the epithelial origin of these tumors and their resemblance to chorioma. Schlagenhaufer, also in 1902, accurately described chorio-epithelioma of the testis and found five other cases of the neoplasm in the collection at the Vienna Museum, which had been diagnosed as mixed tumors of the testis, sarcome angioplastique, embryoma, and so forth. He concluded that this variety of teratoma is a true analogue of chorioma of the placenta, and Wlassow and Steinert, reviewing the reported cases of this group in connection with their own material, pointed out the close resemblance of this tumor with chorioma, traced the origin of the syncytial masses from the epithelial structures, identified glycogen-holding Langhan's cells, noted the hemorrhagic character of the metastasis, and showed that chorioma testis reproduces many essential features of chorioma uteri. Since 1902 Jackson[5] has noted 82 cases in the literature of this particular type of testicular tumor including 67 reviewed by Woglom[6], in 1917, and 14 reported by Hartmann. Young[7] reports that of 19 cases studied microscopically, two showed chorio-epitheliomatous areas. Almost half of this number were reported between 1916 and 1920.

Sarcoma of the testis represents a well defined group of testicular new growth. The "sarcome angioplastique" was found to be a derivative of embryonal structures, and the alveolar sarcomas were considered by Langhans and Koches, in 1887, to be carcinomatous in nature, and were classified as such.

Lymphosarcoma, or lympho-adenoma primary in the testis, is a disease distinguished by bilateral involvement of the testis, marked rapidity of development, multiple metastatic nodules in the skin and a definite lymphosarcomatous structure. This is a definite picture of round cells lying in a reticular stroma. Lymph follicles are not seen. In the French literature the reports are, according to Ewing, strongly suggestive of cellular forms of the ordinary round-cell sarcoma of the testis, with large polyhedral cells due to pressure containing large vesicular nuclei and nucleoli. Eosinophile and mast cells are sometimes present.

Spindle-cell sarcoma of the testis is quite rare, but is most frequently seen in very young persons in association with other elements usually occurring in mixed tumors, as myomas and so forth. Ewing concludes that pure spindle-cell sarcoma of the testis requires further demonstration.

Carcinoma of the testis usually occurs as a mixed tumor or teratoma, Langhans recognized a scirrhus and a medullary form, each of which seemed to occur in pure form; the medullary form was thought to be pure carcinoma of the testis.

The medullary carcinoma of Langhans was a grayish or white, firm or soft tumor composed of large polyhedral cells with large vesicular nuclei and cytoplasm rich in glycogen. The cells were arranged in large indistinct alveoli, or grew diffusely, separated at times by fine fibrils of reticular tissue or by firm fibrous tissue as in scirrhus form. The indefinite cariconomatous features of many of these medullary tumors, according to Ewing, led to much uncertainty in the diagnosis

of carcinoma of the testis. Many such growths have been reported as alveolar sarcoma, others as lymphoma, and as the exact origin of the tumor was obscure many writers designated their cases simply as large round-cell tumors of the testis. These round-cell neoplasms were grossly, so similar to the others and also in the clinical course and mode of metastasis through the lymph nodes that the impression has steadily grown that this entire group, including the most common tumors of the testis is carcinomatous in nature.

It is doubtful whether any of the simple tumors of the testis[8] arise primarily within the testis itself. Fibromas have been described as occurring in the tunica albuginia, or arising from the rete testis. Lipomas had been found in the tissues of the spermatic cord. Chondromas and myomas, as such, rarely occur as simple tumors but most frequently as a preponderance of one element in a mixed tumor.

Report of Case

Malignant tumor of the testis with rapid secondary metastasis to the abdominal and thoracic viscera.—A man, aged 33, was admitted to the Ohio Valley General Hospital at Wheeling, West Virginia, April 24, 1926, complaining chiefly of abdominal pain, vomiting, left frontal headache and general weakness. These symptoms had lasted more than six weeks. Four weeks previously he had been to a hospital because of an enlargement and swelling of the right testis and double inguinal hernia. A double herniotomy and right orchidectomy were performed. His postoperative convalescence was apparently uneventful, and he was dismissed from the hospital April 13. On April 17 a severe pain developed over the left eye, and a dull aching pain in the epigastrium. Blood was vomited. He had had no cold, cough, or discharge from the nose. There had been no elevation of temperature at any time. The abdominal pain and frontal headache had been grave enough to require opiates. The nausea and vomiting had been continuous but the vomiting was not projectile in character. Little if any nourishment was retained. The frontal headache or the pain over the left eye was more severe during the attacks of vomiting. He had lost about 30 pounds in weight and was extremely weak. During the last four or five days he had been semi-stuporous, apathetic and restless, and slept poorly at night.

He had had typhoid fever several years before examination. He denied veneral infection.

When examined the patient was lying in bed in the right lateral decubitus position. He was evidently in distress, and was nauseated if he turned to the right side. He was mentally dull and seemed entirely oblivious of his surrounding. The pupils reacted to light and accommodation although sluggishly to the former. There was no mastoid tenderness or discharge. The tongue protruded to the median line. Two teeth were crowned and there was evidence of moderate pyorrhea and gingivitis. The nasopharynx was somewhat congested. The tonsils were not grossly infected nor enlarged. The facial expression was anxious. There was no assymetry, nor thyroid enlargement. The chest was normal in size and shape; the anterior posterior diameter was somewhat increased. There was hyperresonance on percussion throughout. Breath sounds were normal. Expansion was equal and adequate, there being no retraction of the interspaces. Crackling rales were heard at the bases of both lungs. There was no increase of the transversed deep cardiac dullness; heart sounds were normal.

The abdomen was not rigid or tender. The spleen was not palpable. The liver was enlarged about 8 cm. below the costal margin. There were two healed scars in the inguinal region. An irregular, nodular, seemingly fixed mass was palpable in the median line of the abdomen below the umbilicus.

The left testis was normal in size and consistency. The right testis was absent. There was a scar extending over the right side of the scrotum toward the median raphe. Inguinal and axillary nodes were barely palpable. Kernig reflexes were negative. The tendo-achillis and knee jerks were slightly increased on both sides. No

ankle clonus or Babinski sign was present.

The urine was cloudy and acid in reaction. The specific gravity was 1.020, and there was a trace of albumin. The erythrocytes numbered 3,432,000, and the leukocytes 8,850. The hemoglobin was 50 per cent, polymorphonuclears 78 per cent, small leukocytes 19 per cent and large leukocytes 3 per cent. The spinal-fluid cell count showed three mononuclears. Some erythrocytes were present. The spinal-fluid globulin pressure was not increased. The urea-nitrogen was 15.55 mg. for each 100 c.c. of blood. Complement-fixation was negative. Roentgenogram of the liver showed definite clear-out, apparently encapsulated masses scattered throughout, varying from 8 to 2 cm. in diameter. In both sides of the chest were many scattered masses of varying sizes. The larger and more extensive masses were on the right side.

The patient gradually grew weaker, passed into a state of coma, and died April 29 five days after admission. At necropsy an irregular nodule, 7 by 4 by 3 cm., was found in the right iliac fossa immediately beneath the scar of the right herniotomy incision. The retroperitoneal lymph nodes along the course of the abdominal aorta and inferior vena cava were markedly enlarged and fixed. Scattered throughout both lungs were fifteen or twenty definitely encapsulated nodules varying in size from 1 to 4 cm. An adherent pleuritic lesion was found at the apex of both lungs binding the visceral to the parietal pleura. Several circumscribed nodules were found throughout the liver. Small nodules 0.5 and 1.5 cm. were found in the spleen, right kidney and stomach. No examination was made of the brain or spinal column. Section of tissue from the liver showed numerous masses of tumor cells pushing aside and destroying the liver substance. These masses were composed of polygonal cells of a pavement type varying greatly in size but most of them had a pale vesicular nucleus with vacuolated cytoplasm. In some places were numerous large multinuclear giant cells and in others some of the tumors seemed to be lined by a synoytial mass showing large hyperchromatic nuclei. These cell masses were often surrounded by large sinuses filled with red blood cells. Sections of the lung, spleen, nodule from stomach and mesenteric lymph nodes all showed invasion by the same type of tumor cell.

A diagnosis was made of secondary carcinoma of the lungs, liver, stomach and mesenteric lymph nodes. Microscopic study of the tumor showed a rapidly growing carcinoma of an embryonic type. Because of the history of orchidectomy for tumor some time previously there is little doubt that these tumors were metastatic.

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HOW HOSPITALS CARE FOR BODY OF MENTAL PATIENT

It would be a foolish thing to attempt the cure of a sick man if it were housed in a sick body, asserts Dr. L. D. Hubbard, writing in *Hygeia*... Realizing this fact, hospitals for mental disease give every care to the physical as well as the mental condition of the patients. As a result, many a patient leaves the hospital saying that he feels better and is happier than he was before his mental trouble came on him.

The patient's physical welfare receives attention almost as soon as he sets foot in the hospital, beginning with a bath and a shampoo. Within a few hours he is seen by a physician and any acute disorder is treated. During the next few days a thorough physical examination is given him, with any special tests that may be indicated. This includes a complete examination of the teeth.

THE MEINICKE REACTION FOR SYPHILIS*

By BEN F. BRUGH, A. B., M. D., ROY H. LANDON *and* ELIZABETH LAIRD
Montgomery, W. Va.

IN RECENT YEARS many attempts have been made to diagnose syphilis by a method which was more simple and less expensive and yet would be as specific in character as the Wassermann reaction.

Of the many tests that have been tried out only two seem to offer any possibilities, the Meinicke reaction and the Kahn precipitation. The Kahn precipitation reaction is very simple but the results are very hard to interpret which, of course, is the cause of a large percentage of errors. The Meinicke test is also very simple and the results can be very accurately determined. It is for this reason that we prefer the Meinicke reaction to the Kahn precipitation reaction.

In 1917 Meinicke and Sachs-Georgi proposed a test for syphilis based on a white precipitation when an alcoholic extract of a normal heart was added to the blood serum of a syphilitic person. Since this was not a true precipitation test from a biological standpoint it was called a floccule formation test. These early flocculation tests, however, had many disadvantages and the procedure was not altogether simple. In the course of years most of the objectionable features have been eliminated and Meinicke, in his third modification, using a tulol balsam extract of horse heart, demonstrated that a turbidity precedes the floccule formation. This takes place within an hour and is easily recognized with the naked eye. The nature of this floccule formation as well as the Wassermann reaction is not entirely understood. Meinicke, however, considers his test to be a true immunity reaction depending on a specific antibody.

The reagents required in this test are a tulol balsam extract of horse heart, a 3 per cent. sodium chloride solution and the patient's serum.

The technique is very simple and can be carried out in about fifteen minutes. The serum is obtained as for the Wassermann test but does not have to be inactivated. Put 0.2 c.c. of the patient's serum in a small test tube. The next step is to prepare the extract and salt solution for mixing. Measure 1 c.c. of extract in a 15 c.c. test tube and 10 c.c. of a 3 per cent solution into another 15 c.c. tube. Place these two tubes in a water bath at 40 to 45 degrees centigrade for not less than ten or more than twelve minutes. Remove them from the bath at the end of the specified time and mix immediately by pouring the salt solution on the extract; back and forth not more than two times. Add 1 c.c. of this mixture while warm to each tube containing the serum to be tested. Shake each tube well to insure mixing after which put the test tubes in a dark place or box, to exclude all light, and at room temperature 20 to 25 degrees centigrade. The reading can be made at the end of an hour. The strong positive will be more opaque than the negative. The final reading, however, cannot be made for at least ten hours. At the end of ten hours or more remove the test from the dark place. At this time a precipitate will have settled to the bottom of the tubes, giving a positive reaction. In a four plus reaction the supernatant fluid will look as clear as water. In a three plus not quite so clear and in a two plus not so clear as the three. The negative will show about the same as when test was first mixed.

In checking this test with the Wassermann reaction we get a very close parallelism. Five

* An Original Article.

hundred bloods were checked with a very promising result.

Findings with Wassermann and Meinicke Tests

WASSERMANN TEST

Negative	417
Positive, strong	32
Positive, weak	22
Positive, weak	6
Positive, weak	21
Anti-complementary	2

MEINICKE TEST

Negative	417
Positive, strong	32
Positive, weak	22
Positive, strong	6
Negative	1
Negative	2

Of the six cases that showed a weak positive Wassermann reaction and a strong positive Meinicke reaction five had a history of syphilis or had a positive Wassermann a few years before. This leads us to believe the Meinicke is the more sensitive of the two tests.

Of the twenty-one cases which showed a weak positive Wassermann reaction and a negative Meinicke test eighteen gave a history and had clinical symptoms of some acute infectious disease and no evidence of syphilis. As it is well known that acute infectious disease will sometimes give a weak positive Wassermann reaction, we believe that the Meinicke test is governed entirely by a specific antibody.

Two cases were anti-complementary in the Wassermann reaction and negative in the Meinicke test. Bloods that have become hemolyzed or anti-complementary seem to have no effect on the Meinicke test, while in the Wassermann reaction the results cannot be determined.

It is our intention in reporting our findings on these 500 cases, not only to show the medical profession the close parallelism between these two tests but to emphasize the simplicity of the Meinicke reaction.

This test should be of great value to small hospitals not equipped or not in the financial position to do Wassermanns. It should also be of great value as a check on the Wassermann reaction in hospitals equipped to do them.

REPORT OF COUNCIL ON PHYSICAL THERAPY

The Council on Physical Therapy of the American Medical Association, on the basis of the present available evidence, is convinced that the sale of generators of ultraviolet energy to the public for self-treatment is without justification. The Council bases its condemnation of the sale of such apparatus for this purpose on the following grounds:

1. The uninformed public could not take the proper precautions in administering treatments and, as a result, severe general burns or grave injury to the eyes might ensue.

2. Those not familiar with the possibilities of such apparatus would be led to place unwarranted confidence in the therapeutic value of such treatment by the claims that might be made in the literature advertising such generators, and to undertake to treat serious conditions not amenable to such treatment.

3. The unrestricted possession of such therapeutic means would tend to deprive people of expert diagnosis by encouraging them to make self-diagnoses.

4. Such practice would encourage the sale of useless and fraudulent lamps which would be advertised as generators of ultraviolet rays, since the public would have no means at its disposal to determine the quality or quantity of the radiant energy emitted by such lamps.

For the foregoing reasons, the Council on Physical Therapy considers as detrimental to public welfare the sale or the advertising for sale, directly to the public, of a generator of ultraviolet energy. Under rule 11 of its Official Rules, the Council will declare inadmissible for inclusion in its list of accepted devices for physical therapy apparatus manufactured by a firm whose policy is in this matter detrimental to public welfare.—*Reprinted from The Journal of the American Medical Association, Jan.* 22, 1927, Vol. 88, p. 245.

ABSTRACTS

Giardiasis

William C. Boeck, of the Harvard Medical School, contributes an excellent article on Giardiasis to the January *Archives of Internal Medicine.* He reviews the literature on this protozoan flagellate and its relation to the human host. His study goes especially into its possible etiological relationship to gall bladder disease. We quote his summary:

"Giardia infections occur more often in children than in adults, and the incidence of infection is remarkably high in children from 1 to 7 years of age. The infection appears to be acquired, as a rule, after the first year of life.

"Giardia is said to cause recurrent diarrhea in children, and diarrhea only or diarrhea alternating with constipation in adults. Diarrhea in young children is more frequent than in older children and adults, but this is due to the fact that most cases are due to improper feeding or to colitis due to dysentery bacilli.

"In children and adults as a whole statistical studies indicate that diarrhea does not occur any more frequently in those persons infected with Giardia than among noninfected persons.

"The belief among physicians that Giardia causes diarrhea appears to be due to three factors: (a) numerous reported 'cures' are now known to be in most cases without basis of fact; (b) reported cases of diarrhea and 'cure' by physicians on a group of selected, sick persons complaining of diarrhea at the time or in the past; such evidence is onesided for the well persons with Giardia infections do not come under the physician's care but are seen and examined in protozoan surveys that by the very nature of things do not include such an exclusive selection of persons; (c) animal inoculation experimentation and the observation on material obtained at necropsy of man infected with Giardia are cited as evidence, but a review of the data shows the evidence to be either meager and devoid of proper control measures or open to other and as logical interpretations. They are at best quite inconclusive and demanding of more confirmatory observations.

"There appears to be no specific symtomatic onset that characterizes infections of Giardia clinically.

"If we weigh the evidence at hand, there is little in the way of scientific proof that indicates Giardia lamblia itself causes diarrhea in either children or adults, except perhaps in a few obscure and sporadic cases, and as much or more evidence, some of it statistical and some pathologic in character, that indicates that this protozoan does not cause diarrhea. It remains to be proved, however, whether Giardia might influence temporarily an existing affection, viz., duodenitis or colitis of bacterial origin which causes or aggravates a diarrhea already present. The evidence pointing to this possibility is totally lacking at present, and all discussions constitute only theoretical speculations.

"The finding of viable Giardia in the gallbladder following its removal has been reported only in the single case of Smithies. The occurrence of this flagellate in the B fraction of the bile obtained by the Meltzer-Lyon method of duodenal biliary drainage does not of itself constitute evidence of invasion of the biliary passages, even in cases of chronic cholecystitis. The conclusions reached by various gastro-enterologists that Giardia may either cause chronic cholecystitis or secondarily complicate this condition appear to be based on inadequate evidence.

"The data at present available indicate that Giardia does not initiate any pathologic changes and it is questionable whether it in any way tends to aggravate, prolong or extend pre-existing inflammatory conditions of duodenum or gallbladder. This conclusion is deduced from the following facts: (a) Giardia up to the present time has been found in only one instance in the gallbladder removed at operation, (b) while in children gallbladder disease is extremely rare, the rate of Giardia infection is two or three times as great as in adults in whom chole-

cystitis is comparatively frequent; (c) Giardia infections occur infrequently in persons with diseases of the gallbladder, which is, however, frequently a result of gastro-intestinal (bacterial) infection; (d) the symptoms of cholecystitis are cleared up by cholecystectomy, but when associated with Giardia this organism may persist after operation; (e) Giardia infections may occur in several members of the same family but cholecystitis does not occur in all of them and may never appear.

"The rare entrance of Giardia to the biliary tract is probably dependent on a lesion in the papilla of Vater involving the sphincter of Oddi and causing a dilatation of the end of the common duct. Such a lesion might allow both bacteria and Giardia to ascend to the pancreas, gallbladder and liver and in such instances it seems more probable that any resulting disease condition would be better attributed to the bacterial invasion than to the migration of the protozoa, since the latter produce no demonstrable lesions in the duodenum.

"It has not been shown as yet how Giardia may produce any disease and the mechanism by which it obtained entrance to the biliary tract in the single case reported still remains obscure. More experimental and pathologic evidence is therefore necessary to determine whether this flagellate may frequently invade the gallbladder or whether it obtains entrance only in the role of a secondary invader following an antecedent pathologic condition of the biliary tract.

"There is no evidence of scientific value at present to support the theory of Barrow that Giardia lamblia is concerned in the etiology of arthritis deformans, certain forms of neurasthenia, melancholia with loss of weight and such symptoms as nausea, vomiting, belching of gas and epigastric pain and tenderness."—W.E.V.

Irradiation of Diseased Tonsils

An article by J. Coleman Scal, (*Med. J. & Rec.*, 124:873, Dec. 1, 1926) describes a new method of treating tonsillar hypertrophies by means of removable platinum radon seeds, giving detailed reports of a series of cases where tonsillectomy was for different reasons contraindicated, and illustrating the application of the technique to varying pathological conditions.

To carry out the application of the seeds, a new implanter is used which is illustrated and described in the article.

As the pain of implantation and removal is practically *nil*, at no time is any anesthetic required, there is no need of hospitalization, nor disability of any kind. The total absence of shock is a great advantage in inoperable cases.

By means of the implanter the operator is able to place one removable radon seed in the center of a tonsil so that radiation is distributed equally throughout. The radon seed used is filtered by 0.3 mm. of platinum. This filtration cuts off the caustic Beta rays thus doing away with all possibility of burning with consequent necrosis and sloughing.

When the instrument is withdrawn after implantation the seed is left imbedded in the tonsil with a 2 cm. length of thread-protruding from the portal of entry. This short thread does not in any way inconvenience the patient, nor cause the slightest interference with function. At the end of four days the seeds are easily removed by grasping the thread with forceps.

The point of the trocar is so fine and the seed so small that very little trauma is done to the tonsil.

The amount of radiation can be measured with accuracy and the applicators located with such exactness as to insure equal and complete distribution throughout the tissues. Only one treatment is necessary, a fact much appreciated by the patient. Systematic reactions of any kind never occur. The attached thread, making the seed easily removable when its period of service is over, does away with an objectionable foreign body being left in the tissues—a drawback to the bare tube method. The author concludes that in the implantation of removable platinum radon seeds we have at present an adequate substitute for tonsillectomy in those cases where surgery is, for any reason, contraindicated.

The technic and method described in the

article has been developed by Dr. Joseph Muir of New York.

Local Anesthesia for Treatment of Fractures

The present trend of practice in this country is insisting more and more on the exact, complete and prompt reduction of every fracture under control of the X-ray picture, first for demonstrative diagnosis and secondly for practical evidence of its complete reduction and maintenance during the healing process.

Such therapy is considered, by reason of its requirement of complete reduction and the time necessary for X-ray plates before and after reduction, to make necessary a complete anesthesia—more exactly analgesia —throughout the entire period of making the diagnosis, effecting complete reduction, making the requisite apparatus for immobilisation, etc., as well as the exposures, before and after, for the X-ray plates.

The time of accomplishing all of these things is so great, that where a general anesthetic is used, it involves all of the undesirable symptoms, dangers and after effects of any such prolonged deep anesthesia. For reduction of fractures under general anesthesia the deep unconscious state is absolutely necessary.

All the requisites for fracture therapy under complete analgesia, without requirement of general anesthesia, and for any period of time desired are met by the use of local anesthesia.

For all non-complicated fractures this local analgesia is easily effected by use of suitable needle and syringe, pushing even into the marrow of the bone, at the site of fracture, and in close approximation about it, a small quantity of a 2 per cent solution of novocaine-adrenalin in distilled water. In the vicinity, make also a few intramuscular injections with this same solution; and in case the fracture be juxta-articular, make at least a small injection of this solution into the joint (intra-articular).

In about fifteen minutes time there results a complete analgesia, with complete muscular relaxation and the suppression of all reflex contractions during the entire time of the requisite manipulations for the complete reduction, maintenance and control of all such fractures.

Such procedure is not new. In fact, it is extensively used by a number of surgeons; but it seems this local anesthesia in fracture therapy is not sufficiently known to the general practitioner for his use to anything like the extent the method merits. This is the expressed opinion of one of the noted surgeons, Dr. Perrin of Lyons, when discussing the subject at the recent French Congress of Surgery (Paris, Oct. 10, 1926) who reported a series of 33 fractures thus treated by him, including: 4 Dupuytren, 2 of the leg, 3 of the humerus (dyaphysis) and 3 sub-condylian, 5 of both bones of the forearm, 1 of the olecranon, 14 of the inferior extremity of the radius, 1 of the collar bone. In 31 of these cases the analgesia was perfect, but once failed to be affected at all and in another case was imperfect; these two last cases were of course due to faulty technique.

During the European war in Russia, where many of the first aid stations of the front line were insufficiently manned, this method of analgesia was very widely used, as it permitted the surgeon without other skilled assistant to accomplish rapidly, thoroughly and painlessly the reduction of all such fractures, and the long persisting analgesia was also of great value in permitting the immediate transportation of such patients, as soon as the fracture was completely immobilised, to the rear and even directly into evacuation station, as he was free from pain and completely assured of all necessary care of his fracture for at least a week.

In all the industrial work of our state, it would seem that the first attending surgeon would find this local anesthesia invaluable for his immediate care of fractures of this nature and in hospital practice it should be a preferred method for the reasons stated, and even might well become the established routine of procedure.

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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EDITORIAL

Tularemia in West Virginia

Tularemia is a disease which has only recently been discovered, first being found by McCoy and Chapin as the cause of a fatal epidemic of ground squirrels in Tulare County, California. It is an infectious disease caused by bacterium tularense, found in nature as a fatal bacteremia of rabbits or ground squirrels, transmissible to man by contact with the internal organs or body fluids of infected animals or ticks.

Human cases have been reported from twenty states, having a distribution over the entire country. From West Virginia five proven cases have been reported, and from a description of certain unusual cases by several physicians in this state, it would seem that many more have occurred which were not at the time recognized. Practically all the cases in this state have occurred during the open season for rabbits, from November to February, being contracted from infected animals.

Bacterium tularense is a small, pleomorphic organism occurring in bacillary and coccoidal form, both in tissues and in cultures. It is gram-negative, non-motile, and non-sporebearing. It grows well on glucose cystine agar, but not on ordinary culture media.

Three types of the disease have been recognized:

1. Ulcer-glandular, the primary lesion being a papule, later an ulcer on the skin and accompanied by enlargement of the regional lymph glands.

2. Oculo-glandular, the primary lesion being a conjunctivitis, and accompanied by an enlargement of the regional lymphatic glands.

3. Typhoid, without primary lesion and without glandular involvement. All in this group have occurred in laboratory workers who had handled infected material.

Symptoms. Incubation: This has been from 24 hours to 9 days, the average being 3 days. The onset is sudden, often occurring while the patient is at work, accompanied by headache, vomiting, chilliness, chills, aching bodily pains, sweating, prostration, and fever.

In the ulcero-glandular type the patients complain within 48 hours of the onset, of pain in the area of the lymph glands draining the infected area. These are found to be enlarged and tender, only the regional ones being involved. Often the glandular pain precedes the reference to the site of infection by about 24 hours, which now is apparent as a painful, swollen, inflamed papule which breaks down, liberating a necrotic core or plug, and leaving an ulcer about three-eighths inch in diameter, with raised edges and having a punch out appearance; on healing it is replaced by scar tissue.

There is redness of the skin overlying the enlarged, tender lymph glands. In about half the cases, these glands proceed to break down, and after the inflammation has subsided an abscess ruptures through a soft thin spot in the skin. In the other half of the cases, they do not break down, but remain hard, palpable, and rather tender for two or three months, gradually returning to normal.

A typical inflammatory nodule shows a necrotic center of granular debris and leucocytes. Fibroblasts and giant cells are numerous. The outermost zone is made up of a dense inflammatory exudate with a predominance of lymphocytes and plasma cells. These characteristics place the lesion in the class of infectious granulomata.

Weakness, loss of weight, recurring chills, sweats, and prostration are often noted during the active stage of the disease, which lasts from two to three weeks.

The oculo-glandular cases follow the general description given above, but with primary localization in the conjunctival sac instead of the skin.

Convalescence is slow; it is rare for a patient to be at work again at the end of a

month, usually the second month is spent lying about the house owing to weakness on exertion, and during the third month often only half-time work is done. Recovery finally ensues without evident sequelae. Death is rare.

Diagnosis. Because tularemia was not borne in mind, the disease has been diagnosed erroneously as septic infection, typhoid, "flu," and anthrax, owing to symptoms common to the two diseases.

Bearing in mind the following tetrad, the clinician will seldom fail to diagnose tularemia: 1. A history of having dressed or cut up a wild rabbit in West Virginia, or perhaps of being bitten by a tick or a fly in the far West; 2. A primary lesion of the skin in the form of a papule followed by a persistent ulcer or a primary conjunctivitis followed often by ulcers of the conjunctiva; 3. Persistent glandular enlargements in the region draining the primary lesion; and 4. Fever of from 2 to 3 weeks' duration.

To confirm the diagnosis, (1) collect the blood during or after the second week of the disease for an agglutination test with bacterium tularense, (serum sent to Dr. Edward Francis, Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., will be so tested upon request); (2) by isolation of B. tularense by guinea pig inoculation with material taken during the first week of illness. Microscopic examination of cover glass preparations and cultures taken directly from the patient are useless.

Usually a permanent active immunity is conferred by an attack.

The treatment is symptomatic. Rest in bed is most important. Those who have had most experience with the enlarged glands do not advise excision, or even incision, until a very evident, soft thin place appears in the skin overlying the nodules. No preventive vaccine or curative serum has yet been perfected, although recently guinea pigs have been protected against 1000 lethal doses of B. tularense by the injection of immune sheep serum provided the antiserum was not given later than 24 hours after the inoculation.

For more complete descriptions, the reader is referred to the following:

1. Francis, Edward. Tularemia. Second Ludvig Hektoen Lecture. Proceedings of the Inst. of Med. Chicago, 1926.
2. Hodges, F. Churchill. Three Cases of Tularemia, one resembling Sporotrichosis. Am Jr. Med. Sc., July, 1925. No. 1, Vol. clxx
3. Permar, H. H. and Weil, G. C. The histopathology of the subcutaneous lesions of tularemia in men. A. M. Jour. of Path., May, 1926. Vol. 2, No. 3.

F. CHURCHILL HODGES, M. D.
Huntington.

Carbondioxide Snow as a Treatment for Stricture of the Rectum

Carbondioxide snow was first demonstrated as a treatment for stricture of the rectum and sygmoid by Dr. E. J. Clemens of Los Angeles, Cal., at Indianapolis in 1925. He had been using it for a number of years and found it to be satisfactory. I have used it in a small number of cases and find that it works very satisfactorily. The great advantage of this treatment is that it can be used in the office and the patient does not suffer any pain or discomfort to speak of.

The snow is obtained by placing a chamois skin over the mouth of the opening of the gas drum with the mouth of the opening lower than the rest. The spigot is turned and the carbondioxide is permitted to flow into the chamois skin forming a white snow. The snow is then packed tight into a rubber finger stall and a catheter inserted into the end and tied tight. The catheter is then pulled through a rubber gas tube about three-quarters of an inch in diameter and twelve inches long. The finger stall containing the carbondioxide snow is then inserted into the stricture and let remain about fifteen minutes. This is removed and another inserted in the same manner until four have been inserted into the stricture. Then after this is removed the patient is permitted to return home and is told to keep quiet for a few days. The stricture just seems to melt away like a gumma melts away under syphilitic treatment.

There are a few things which should not be done in this treatment. First, do not let the snow come in contact with the skin or

any part of the body except the stricture, (your own hand should be covered with a rubber glove) and it should be in the stricture all the way through or as far as the gas pipe will permit the finger stall to go. If the stricture is as much as four inches long, it will be necessary to give it two treatments about two weeks apart. However, it could all be treated at one time if you could get to it but you will probably not be able to get farther than two inches up into the canal with your first treatment.

W. P. BLACK, M. D., Charleston.

Relationship of the Surgeon and General Practitioner

As a text on this subject I announce that frankness, fairness, friendliness, fearlessness, freedom from egotism, a generous recognition of our own limitations and the possibility of error of judgment, should always characterize our opinions and our actions.

This applies to the general practitioner and the surgeon equally.

What is our objective? Why do we exist as a profession? Is it for ourselves that we are here or is it for the good we can do and the relief and happiness that we can extend to our fellow man?

I sometimes read articles and see activities even in the high places in our own organizations that make me wonder if selfishness (which is the devil's salad dressing) does not make us lose sight of our objective. The relationship that should exist between the general practitioner and the surgeon is so clearly outlined and so obvious that it makes me feel as though I were standing up the medical profession of West Virginia in a primer class such as a memory of forty years leads me back to.

Every point of contact should show a glittering glow of co-operation, mutual confidence, mutual respect for the feelings of each other. A sense of unquestionable charity for the mistakes of each other's shortcomings should exist. Both are heir to them.

They should both follow when possible the patient to the operating room, many times the physician can tell the surgeon of some idiosyncrasy of the patient that means a lot for his benefit.

The physician benefits always by seeing the pathology found or unfound. It helps him in his diagnosis of the next similar case. This subject is too big for one editorial. I will finish it at some later time.

Let us remember that we are co-workers. That the patient's best interest is our objective and that to practice the Golden Rule the triumvirate will obtain the best results possible under the circumstances.

GEORGE A. MACQUEEN, M. D., Keyser.

Kidney Calculi

While not particularly common in its ratio of incidence, this condition does nevertheless occur in a rather considerable number of cases. As a pathological entity it is distressing because it is painful, disabling and certainly in many cases not altogether amenable to treatment.

While the incidence is greater in the male of sedentary habits, it happens from time to time in the young, robust and active individual.

To go back to a possible beginning some form of infection in the urinary tract must be the starting point. Anything that can act the part of a foreign body will of course suffice for a focus that may grow indefinitely.

Active, outdoor physical exercise by conducing to a general state of physical well being should be considered along preventive lines. A diet not too concentrated and the free ingestion of bland liquids theoretically at least, would strongly militate against stone formation.

The stone, when once formed definitely, acts as a foreign body and brings into play all that may come from the so-called state of foreign body irritation. Scar tissue from pressure irritation continues to develop as a sequence. There is a progressively coincident infection. Kidney function is retarded and finally brought to a complete standstill. Ultimately the kidney becomes a mere shell of its former self. The fate of many small calculi is to pass down the urinary ways by peristasis, *viz* a tergo and gravity and be voided with the urine, this of course is the

favorable ending. Too many lodge at some narrowing or obstruction; grow by continued accretions and continue on their destructive career. The symptoms complex plus the findings from careful urological X-ray and laboratory study usually suffice for diagnosis.

When the calculi are small and the attacks are neither too frequent nor severe, it may be justifiable to leave them undisturbed. Surgical attack unfortunately constitutes the only really available remedy. If the gravity of the pathology is such that operation is deemed necessary, the nature of the procedure requisite must be considered, whether the involved kidney is functionless or not and the soundness of the functioning organs are conditions that should be known before the patient comes to the operating room. Reconstructive operations such as attempts to straighten out kinks in the ureters and plastic procedures directed toward the reshaping of the kidney pelvis have not proven to be of real worth.

When it becomes necessary to invade the kidney for the purpose of removing the calculus, it is probably better to make the incision through the kidney pelvis rather than to go through the cortex, for the reason that a cortical incision must of necessity do a great deal of damage to the kidney structure.

J. E. CANNADY, M. D.,
Charleston, W. Va.

Practice of Law

We have from time to time expressed more or less personal opinions about the Practice of Law. These have generally happened after being in court as a witness, reading an account of a malpractice suit or meeting lawyers while attending "a legislature." We believe they have no prophylaxis. We believe they are behind the spirit of the age. Yet if we were asked who was the best all around citizen in Wheeling we would say Ben S. Honecker, a lawyer. All this leads us up to the February number of *Harper's Magazine.* If you are interested in this subject you will find "Lawyers and Morals," by Newman Levy, a good article. Then you will find another one by your old neurological friend, Dr. Joseph Collins, "A Doctor Looks at Doctors"—with which you will not agree but which will make you ponder. Dr. Collins relates a story which from his own standpoint may be dramatic since it concerns an empyema he struggled along with in his own lung for years. As an indictment against the medical profession it is as futile and as full of sophistry as anything we ever read and we are surprised at *Harper's* for accepting it. As the doctor says an X-ray would have picked it up at once—and the X-ray is surely no infant discovery. When Dr. Collins touches on the lack of sympathy exhibited by some of us he is quite within the bounds of reality and truth.—H.M.H.

On Memberships

The condition of the membership as of February 20 is far in excess of that reported to the executive secretary in either of the past two years. This presages a sustained interest in organized medicine and its activities.

Now, about one other important matter:

Undes postal regulations governing such publications as your *Journal,* names of all members delinquent April 1 must be dropped from the mailing list until their dues have been received. Failure to so remove the names will mean that the *Journal* would be liable to have its second-class mailing privileges removed.

There is bound to be some confusion if any goodly number of names must be checked from the list and then reinstated at some future date. Accordingly, the officers and councillors urge that all members see that their dues are paid as early as possible so that the secretaries and treasurers may make their reports to the executive secretary before the "dead line" date.

POSITIVE EVIDENCE REQUIRED

That the statement of a physician that an injury "probably" hastened death from myocarditis cannot be considered as proof of a casual connection, is the opinion expressed by the Pennsylvania Superior Court, according to *Pennsylvania Progress* for November, 1926. There must be direct evidence to support a finding. This opinion was rendered in the case of Rose Sarko *vs.* P. & R. Coal and Iron Company.

REPORTS FROM COMPONENT SOCIETIES

Ohio County

Doctor George J. Wright, Pittsburgh, Pa., gave an interesting address before this society Friday, February 25, in the Elks' Club, on the subject, "Some Observations on the Interpretation and Treatment of Functional Nervous State." Discussion was opened by Doctor C. A. Wingerter.

Doctor Wright gave an account of his subject that was refreshing as well as stimulating. Any medical society in this state that wants to give its members something to think about will help their nervous patients at once without bringing any new instruments or learning any new technique would do well to invite Doctor Wright. He could talk on anatomy and you would listen to him. Heretofore these nervous cases have been passed along. However, you will retain quite a few when you have heard Dr. Wright.—H.M.H.

Raleigh

The regular monthly meeting of the Raleigh Medical society was conducted February 24 in the Beckley hotel and was featured by a symposium on obstetrics. Those participating were Doctor D. L. Hill, who spoke on "Prenatal Care—Pelvimetry and Its Practicability"; Doctor R. P. Woods, who spoke on "Anesthesia and Accidents in Delivery"; Doctor M. S. Doak, who discussed "Normal Labor"; and Doctor M. C. Banks, who spoke on "Toxemia of Pregnancy and Puerperal Sepsis". The discussions were opened by Doctors U. G. Cook and W. D. Simmons. A buffet lunch was served and the attendance was good. A business session also was held.

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker Medical society met in the Central school building in Elkins, on February 17, 1927, 7:30 p. m., the following being present:

Doctors E. M. Hamilton, W. W. Golden, B. I. Golden, T. M. Wilson, A. S. Bosworth, S. G. Moore, W. S. Michael, E. R. McIntosh, O. L. Perry, R. J. Detrick and J. C. Irons. Dr. Hamilton presided.

Doctors Richard Talbott of Erwin, and R. J. Detrick of Davis Memorial hospital, formerly of Hastings, Nebraska, under suspension of rules, were elected members of the society.

A communication from Dr. C. A. Ray, relative to case reports for the May issue of the *Journal* was read; also a communication from Dr. J. N. Simpson, asking that the society pass resolutions, asking our representatives in Congress and Senate to support the bill pending, appropriating aid to hospitalization and Medical College at Morgantown. Owing to limited time and small attendance, action was deferred.

Then a communication from Dr. R. A. Ireland, chairman, Public Policy and Legislative Committee, was read, regarding the supplying of *Hygeia* to all our representatives in state senate and legislature. But since the society had previously decided to pay for seven copies at the reduced price for three state senators and four legislators from our territory, no additional action was deemed necessary.

The treasurer then made a brief report calling attention to the increased expenditures necessary, and to decrease in receipts, stating that it would be necessary to cease paying the secretary a salary, or to increase the assessment for local expenses.

On motion of Dr. B. I. Golden, the local dues were increased by an assessment of one dollar extra for 1927, said amount to be paid by June 1, next.

Dr. Hamilton appointed the Program Comittee for 1927, viz., Doctors C. B. Williams, S. G. Moore and J. L. Miller.

The society then adjourned to meet in Elkins, in April, after which they repaired to the auditorium to hear Judge H. Roy Waugh deliver a public address on "The Medico-Legal Status of the Physician." The address was most illuminating and complete, the only regret being that so few heard it. The Elkins High School orchestra furnished music. We expect to have Judge Waugh's

paper for the *Journal*, therefore will give no synopsis. Read it.—J. C. IRONS, *Secy.*

Preston

The following officers have been elected to serve in 1927 by the Preston County Medical society:

Doctor W. A. Welton, Terra Alta, president; Doctor R. D. Harmon, Kingwood, vice president; Doctor L. H. Lewis, Kingwood, secretary-treasurer. Delegates to the sixtieth annual meeting are Doctors B. S. Rankin of Tunnelton, and R. D. Harmon of Kingwood.

Mercer

The Mercer County Medical society held its annual banquet and regular monthly meeting in the banquet hall of the West Virginian hotel in Bluefield, Wednesday, December 22, 1926.

The following members, their families and friends, gathered around the banquet table at 7 o'clock, and enjoyed the following menu: One-half grape fruit, pickles, celery, roast turkey, dressing, cranberry sauce, mashed potatoes, hot rolls, butter, apple butter, head lettuce, Thousand Island dressing, mince pie, and coffee:

Dr. and Mrs. Fitzhugh and son, Dr. and Mrs. Kell, Doctors Collison, Hare, McGuire, Kirk, Peery, Dr. and Mrs. Horton, Dr. and Mrs. Hoge, Dr. and Mrs. Rogers, Dr. and Mrs. Richmond, Dr. and Mrs. Craft and Mrs. Tanner, Doctors J. R. Vermillion, Mastin, Steele, Dr. and Mrs. Massey, Dr. and Mrs. W. H. St. Clair, Dr. and Mrs. C. T. St. Clair, Charlie St. Clair, Hon. Roy Cole (guest of honor), Dr. and Mrs. Haggart, Dr. John Bird, Dr. and Mrs. Reynolds, Mr. and Mrs. James Elmer Brown, Miss Ellen Burnett, Messrs. Wm. and Marshall McDougle and mother, Messrs. John Mastin and Ray Evans, Mrs. Harlow and guest; Doctors Leppers, Slusher, Vass, and Dr. A. A. Shawkey of Charleston.

An interesting entertainment program, featuring some of Bluefield's best talent, was given under the direction of Dr. H. H. Haggart. As a headliner, Ray Evans, in the role of a brain specialist, maintained his usual standard of humor.

Miss Ellen Burnett, soprano, appeared in the next number. At the conclusion of her solo she responded to an encore. Miss Burnett was accompanied at the piano by our good friend, James Elmer Brown. John Mastin, baritone, sang two numbers which were well received.

William and Marshall McDougle, one at the piano and the other singing, brought to close the entertainment program in a delightful duet.

Dr. A. A. Shawkey, the principal speaker of the evening, coming in late, after having considerable bad luck traveling over the roads between Charleston and Bluefield, was introduced by the secretary. Dr. Shawkey expressed himself as having been anxious to come to Bluefield for some time, as he had always heard everybody speak well of Bluefield and never heard any "knockers" of our city.

Under discussion Dr. A. H. Hoge said he appreciated so much the masterly talk in this informal manner, in which Dr. Shawkey gave us this information on "Our Obligation to the Children of Our Communities," and expressed very sincere thanks to Dr. Shawkey for coming here and giving us this valuable information.

Dr. R. O. Rogers said he had nothing to add, but agreed to all Dr. Shawkey said. He said: "Preventive medicine is all important in taking care of infants in childhood. The pediatricians are doing exceedingly good work along this line. I subscribe to everything Dr. Shawkey said here tonight."

Dr. Slusher substantiated what Dr. Shawkey said. He said: "He stepped on our toes and told it to us in a simple way that can't help but do good. I thank Dr. Shawkey for the simple talk from the heart. That is the kind that goes home and does a great deal of good."

Dr. Kirk said: "I fully indorse the paper that Dr. Shawkey read here this evening."

Dr. Charles St. Clair said: "We can't afford to raise babies today along the specialist line, *i. e.*, in feeding them cow's milk, sugar of milk and water. Feed the babies at regular intervals and in some cases I don't see any sense in waking them up when

they were in a sound sleep just to feed them by strict instructions."

Dr. Shawkey in closing the discussion said he appreciated the kindly comments. He said one of the best foods for infants other than mother's milk is modified cow's milk. To relieve acute crises with calomel, one grain, and a tablespoonful of castor oil from three to five days, he condemned such treatment. Dr. Shawkey explained to the society the package library of the American Medical Association, which only costs 25 cents.

A rising vote of thanks was extended Dr. Shawkey for coming over these rough roads from Charleston to Bluefield and giving us this wonderful paper.

Under the topic of "We Want a Tuberculosis Sanitarium established in the Southern end of the State," Dr. O. S. Hare made a few remarks as follows: "There is a real necessity for a hospital of this kind to be located in the southern part of the state. There is always a large waiting list of tubercular patients all over the state for admission to the present hospital we now have. We should have a hospital of this kind in the southern end of the state to give these patients a chance for their lives. Patients at the southern end of the state have too far to go to enter the sanitarium at Terra Alta. Besides, their friends and relatives can't well visit them as often as they would like." He also thought that this matter could be worked out by committees.

The secretary spoke in favor of a tuberculosis sanitarium in the southern end of the state. He said that different civic clubs were working to this end.

Dr. Kirk moved that the chair be authorized to appoint a committee to draw up resolutions in regard to establishing a tuberculosis sanitarium in the southern end of the state and the following committee was appointed: Doctors H. G. Steele, E. W. Horton, O. S. Hare and David Lepper.

A motion was made and carried that the secretary's expenses be paid to Charleston and return to attend a secretaries' meeting.

The following were appointed on the Legislative Committee by the president: Doctors M. N. Mastin, W. H. Wallingford, Sam Holroyd and John Bird.

The following were appointed on a committee to revise and have printed our by-laws up to date: Doctors John Bird, O. S. Hare and H. G. Steele.

A motion was made and carried that the president appoint an advisory program committee to confer with the regular program committee composed of the president, vice president and secretary.

The secretary insisted that all members communicated with by himself in regard to the program for society affairs should extend the courtesy to cooperate with him in these transactions and at least answer his letters by telephone or by letter.

H. G. STEELE, *Secretary.*

BETTER BUSINESS TALKS

A pleasant innovation has been introduced by the program committee of the medical society of the District of Columbia in having a man prominent in business affairs to address the society on the business meeting nights. The society was satisfactorily favored on February 2 in having Mr. Joshua Evans, Jr., present an outline of what the better business bureau is doing to protect the public against exaggeration in advertising, as well as furnishing a means for stopping the activities of salesmen of fraudulent stocks.

NEW TEST HELPS SOLVE QUESTION OF PATERNITY

"Who is the child's father?" is a question that it has never before been possible to answer with sufficient accuracy for legal purposes. Recently, however, it has been found that the grouping of the blood is hereditary to a certain extent, reports *Hygeia.*

The blood of all persons falls into one of four groups according to the way in which the red corpuscles clump together or dissolve when two bloods are mixed. The test now available cannot definitely indicate that a man is the father of a certain child, but it can indicate in some instances that he could not possibly be the child's father.

THE ROMANCE OF PROPHYLAXIS

[NOTE—This contribution was submitted by one of our profession whose modesty in requesting that his name be withheld is exceeded only by brilliance. He certainly has pictured Dr. McLain as an idealist who through untiring effort and uncompromising zeal is about to realize the fruition of a romantic dream. Why not romance in prophylaxis if the vision will lead on to the eradication of a pestilence like diphtheria? There are other arch lights in the firmaments of medicine which may not be only the beauty of a rain-bow.—EDITOR.]

The word romance probably awakens in most people's minds an idea of something pertaining to sex. This is really in no sense the truth, for it can be applied to any situation where the every day is made picturesque. There is a common fable that all things considered, preventive medicine is the most prosaic subject outside of mathematics, that medical men, not to speak of the public, can consider. Advertise a speaker as a talker on health conservation, put forth a book as a reliable hand guide on the avoidance of disease; insert a few pictures of "before and after using" some health rules, and all of them will suffer in popularity. Nor can we feel that doctors read health reports or give the devotion to their health commissioners that their importance merits. At least the filing of reports would not so indicate it.

Therefore, when we run across the facts of the recent campaign conducted in Wheeling by Health Commissioner Wm. H. McLain, to use toxin-antitoxin for the prevention of diphtheria, we are amazed at the romance of it. Here was a preventive campaign which was carried out with the consent and help of those concerned, rather than by any compulsion. When you come to think of it, this certainly is an important step in simplifying prophylaxis. To start off with, if you are an objector to the word romance, and want statistics, consider that Dr. C. H. Keesor, medical inspector, of the Wheeling public schools, gave 9,780 inoculations, volunteer physicians 570, the physicians of Ohio county 3,600, while the health department came in with the astounding total of 19,725, making in all the grand total of 33,675 inoculations, which means that 11,000 children were made, as near as at present they can be made, secure from diphtheria.

Some one has said that the trouble with American men was that whenever they met to do anything, they appointed a committee; the committee appointed a sub-committee; the sub-committee appointed three of its members to see into things; one man controlled the other two. Much time is obviously lost in this little game. This toxin-antitoxin campaign was conceived and handled by one man. It is true others participated, and they should receive their share of the satisfaction of work well done. However, it was to us a health commissioner working out the destiny of his office, in a manner which lifts it to the place it ought to have in a community—which is to say, a highly efficient, progressive position, producing results, definite in function and all performed with a FITTING DIGNITY.

Let us not forget the dignity. If any one outside of the speaker of the United States Senate needs dignity it is a health commissioner. The office of health commissioner under Dr. McLain has tested the very idea of Health Protection. To put over his views in the control of veneral disease has probably made him go home many a night wishing that the cup might be withdrawn. Courage and dignity are the two aces in the pack that are needed. The other two are work and congeniality. A health commissioner often finds himself where he simply cannot be congenial, but in a campaign such as this one, congeniality proved, it seems to us, his best card and had he not had it, very little would have been accomplished.

In the early fall of 1926 at the first meeting of the Ohio County Medical society the co-operation of the medical men was asked for. Dr. McLain freely admits that this

was of the greatest possible benefit to him, not only in the actual performance of part of the work, but also the feeling of security it gave him in the pursuance of his course. The physicians inoculated about 1,200 children, making a special fee of $5.00 to cover the three injections. The most important help came from the Wheeling newspapers. We are prone sometimes to lose our patience over the newspapers, especially when they seem to aid and abet the quacks, but they certainly do respond in a grand manner at other times. The four daily papers printed a great deal of important matter, and each contributed two pages of advertising matter which had been specially prepared by an advertising agency. In addition at the crucial moment the *Wheeling News* printed an account of an epidemic in a nearby town in Ohio, in large type on the front page, thereby giving "Health" the right of way over the Hall-Mills and "Daddy" Browning affairs. At various intervals they reported the progress of the campaign and several reporters whose names cannot be mentioned, can take considerable pride in their portion of the success of the venture.

One of the amazing features was the response in the Parochial schools where no consent cards were given out. After the matter was submitted to the Bishop of Wheeling, and his approval secured, every priest in the city, in a short talk, urged the inoculation, and as a result the Parochial school children were the first to be inoculated. In a number of these schools 100 per cent of the children were inoculated, and the discipline was so good, owing to the hearty co-operation of the priests and sisters, that the work was quickly finished. In one school every child reported for the third inoculation on the day after Thanksgiving Day, despite the fact that the day was a holiday. The children were lined up and the arms cleansed with alcohol, and where discipline was good, the two health department officials were able to inoculate from two hundred to two hundred and fifty children in an hour.

An innovation was the idea that a nervous child could not stay in line. This acted in two ways, those who were undecided about being nervous decided to be normal, while the really nervous ones were not allowed to spoil the morale of the composed ones and were treated later. In considering the whole lot, it can be safely said that 95 per cent of the children in the entire county were inoculated without so much as a whimper, and we believe that this was the experience also of physicians in their offices, so that the bugaboo of pain may be laid aside as of no real importance. This is often advanced as a real issue by opponents of these crusades.

As to infection, which is the cry of the anti-inoculators and some parents, in the lot done by the health department not a single arm was infected. This was made possible by careful cleansing of the arms just before the inoculation, and the use of needles which had just been sterilized in boiling water. A second after effect offered by those opposed to such procedures is reactions. There were some mild reactions, none serious or requiring anything but the most simple of treatments. The health commissioner believes that subcutaneous injection rather than deep injection will make the matter of reactions almost negligible. This then makes the actual giving of this protection a matter of no pain, no reaction and little or no cost. What more could be required?

The experience of the health commissioner harkens back to the good old days of saddlebags and illustrates how we all will strain in on our reserves where we are anxious to have our big projects carried through. We know the doctor often lunched in his Ford car or the office. Spent much time in the office at night and at holiday time. The great proportion of the inoculations were made by the health commissioner and one nurse. Three inoculations to each child in each school. Forty-six schools. Twenty-two outside the city. Some of them the "little red school on the hill." Many people even came from Ohio due to the fact that the "idea was sold" on posters on the front of the various street cars which traverse eastern Ohio. This novel idea brought about a great interest in the movement, not only in Wheeling and Ohio county, but in the

neighboring towns located in Ohio and Pennsylvania.

Dangerous roads were encountered in the work of administering the toxin-antitoxin in the regions of Mozart Hill and Bethlehem, but nothing was allowed to interfere with the idea of inoculating *all or none.* It is quite evident that to allow anything to interfere with the widespread acceptance is futile, so no areas of the neglected were allowed.

Many physicians have long since pronounced children very satisfactory if not the most satisfactory of all patients. In this campaign they good naturedly referred to them as "shots" and any doctor who has to give serum in the future, will find his pathway made quite easy by the fact that a good child is supposed not to mind a shot, having had three without a whimper.

A little more about the publicity. Hastily enumerated this consisted of three-foot posters on fronts of the street cars. Slides shown at every performance in the movies. To any other locality who wants to carry this propaganda we would advise the use of the Metropolitan Life Insurance Company film styled "New Ways for Old" taking ten minutes to run. It will prove an attractive feature thoroughly enjoyed by all and in no sense one which will bore an audience or any part of it. This film was seen by 20,000 people in Wheeling. Window cards in 500 stores. The big retail stores exhibited as fine a spirit as the newspapers, aiding by exhibitions and good words in every way. This is a feature worthy of observation. The pulpit was called upon and responded. The days of miracles are passed. One cannot be made whole from all physical ills by bathing in the River Jordan as of yore. But the pulpit can within the bounds of rational procedure still exert its great influence for a sound body, by appealing to the intelligence of its congregations for any health movement, which has the soundness of medical authority and experience behind it.

Each luncheon club was appealed to, and a medical member was asked to get up in the meeting and in a few words explain the meaning and scope of the work, its freedom from danger, and the expected immunity. This also worked to great advantage. It will be seen that no avenue of appeal was overlooked. Will Rogers, who happened to be in the city was asked to boost the campaign in his address to his audience. He missed the request but that he had the right spirit was evidenced by his telegram received the next day:

Cincinnati, Ohio, Oct. 13, 1926.
"W. H. McLain,
Health Commissioner,
Wheeling, W. Va.
Your letter was misplaced at the hotel and I didn't get it until after the show. I am very sorry for if I had known would certainly have done my bit. I wish you all the luck in the world in this work. WILL ROGERS."

The success of the whole campaign therefore centered on five salient points:

Co-operation of Medical Profession.

Advertising Agency Co-operation.

Newspaper Publicity.

Work of the Health Department.

Intelligence of Public.

The question may well be raised, why go in this fashion about a health campaign? To begin with, let anyone who doubts the magnitude of the affair first try his hand in a small well governed town where most everyone is supposed to be intelligent. Let him first try a mere appeal. Next threats. Next compulsion. All will probably fail because to be successful all children must be inoculated. Now let him try all the different agencies within referred to, in another small town of equal size with no threats and no compulsion, and note the result. By drawing this comparison one gets at the whole story, except that in the history we have given, a large city, with mixed population and races, holding its quota of ignorance and natural resentment, replaces the small well governed town. The capacity of one man with the aid of others is at the last the essential feature. The status of preventive disease and its corollary, hygiene, in any town can be told simply by no other instrument than the spinal column of its health commissioner. Either to insist or teach, matters little; courage is

the essential motive back of it all. Here was a lesson to the medical profession. Here was a remedy for the thorns of irregularity that pierce us. It is this, if you teach the public in a romantic picturesque way by familiar routes in a simple straightforward way, and leave no stone unturned, they will come back in wonderful reaction and support you heartily.

With all its advertising and all its activity the whole thing was carried out; noiselessly as far as trouble and friction and criticism was concerned and at a cost of less than nineteen hundred dollars. It is no idle thing to inoculate 11,000 children three times. The very fact it has to be repeated makes it all the more a hazard. That it was done with no compulsion, makes us feel confidence in the gestures of the medical profession. We shall await the results of the inoculations, although we believe even now some good can be safely predicted, but the greatest good will be shown in the years to come. But irrespective of all that, the "willingness to serve," as the gas companies say, will make of this whole campaign a matter of sincere congratulation by the medical profession to Dr. Wm. H. McLain. "Though I speak with tongues of Oslers and Mayos and have not courage I am become as advertising quack, and tinkling charlatan and though I have the gift of diagnosis and understand all physiologies and all treatises; and though I know pathology so that I can see remedies and have not courage, I am as nothing; and though I see the illnesses of the poor and though I give my time to lecturing and have not courage it profiteth me nothing. Courage worketh long and is kind; courage sleepeth not; courage vaunteth not itself; is not too proud; doth not coerce unseemly; seeketh not to hurt; is not easily provoked; thinketh not to force; rejoiceth not in vested power, but rejoiceth in the truth; studieth all things, examineth all things, hopeth all things, cureth all things. Courage never faileth; but where there be remedies they shall fail; where there be preventives they shall cease; where there be knowledge it shall pass away. For we know in part, and we prophesy in part. But when that which is curative shall come, that which was futile shall pass away. When I was not informed I spake as if I kneweth, I acted as if I kneweth, I wrote as if I kneweth; but when I came to understand the tasks I put away compulsory things. For yesterday we all saw through a glass darkly but now face to face. Then I knew in part, now I know it can be done if to them it is known. A health commissioner abideth in faith, hope and courage, these three but the greatest of these is courage."

RATES ANNOUNCED FOR ANNUAL MEETING

Hotel rates for the sixtieth annual meeting of the state association to be conducted in White Sulphur Springs, June 21-23, inclusive, are announced as follows:

Eight dollars per day for each person in room without bath, obliged to use public bath.

Nine dollars per day for each person in room sharing bath, combinations consisting of double and single room with bath between and two double rooms with bath between. Each of the double rooms have twin beds. In the cottages, comprising five rooms, there are two or three baths.

Ten dollars per day for each person in two single rooms with bath between, or double room with twin beds and bath between in the hotel.

Thirteen dollars per day for each person in room alone and having a strictly private bath.

These rates are quoted on the American plan, including all meals except the annual banquet for which a special menu is to be arranged and a cover charge of $2.00 per plate is to be imposed. The rates are effective after breakfast on Sunday, June 19 and continue through dinner, Thursday evening, June 23. They are considerably lower than the famous resort's regular prices.

Also, certain accommodations may be obtained in the village of White Sulphur Springs. An announcement will be made as to these at a later date. The town of Lewisburg is but a 30-minute drive from the hotel and some members may stay there with friends or in private homes. In fact,

everything possible will be done to see that the largest possible number of members and their families are housed comfortably.

Virtually all of the other plans are going ahead smoothly. The scientific committee held another session February 18 during which a definite policy was adopted and a tentative arrangement of the essayists was drafted. Doctor Chester R. Ogden, state president, Doctor Charles H. Keesor of Wheeling, and Doctor E. P. Smith of Fairmont, were present; Doctor Harry G. Steele of Bluefield, chairman, was unable to attend because of illness.

Interest in the session is widespread, according to officers and councilors who have visited the several component societies. Particularly, the Woman's Auxiliary, which has been growing rapidly, is expected to have a large representation.

CENTRAL TRI-STATE MEETING, APRIL 28

The Central Tri-State Medical society, which includes the southern part of West Virginia and the adjacent territory of Kentucky and Ohio will hold its second annual meeting for 1927, at the Hotel Prichard, Huntington, W. Va., April 28, 1927.

Those who have accepted invitations to appear on the program are Dr. Charles G. Heyd, professor of surgery at Columbia University; Prof. Thomas Brown of Johns Hopkins University, and Dr. Walter E. Dandy, professor of surgery, Johns Hopkins.

The evening session will be preceded by a banquet to which are invited, not only the doctors who are in attendance but their families and friends, as well. There will be an excellent musical program and other entertainment during the banquet. The attendance at the last meeting was considerably beyond the five hundred mark and the committee on arrangements is anticipating an even larger crowd for the April meeting.

There has been an unusual enthusiasm in this new society, as evidenced by the excellent attendance, due no doubt, to the reputation and standing in the profession, of the men who have appeared on the programs. The standard of quality of the speakers has been high and the program committee promises no relaxation in their efforts along this line.

MEMORIAL EXERCISES

At the memorial exercises held at the Medical College of Virginia, Richmond, on January 7, for Dr. John W. Brodnax, anatomist and artist who died last October, papers were read by Dr. W. Lowndes Peple, Dr. Robert C. Bryan, Dr. H. L. Osterud, Dean W. F. Rudd and Mr. Rufus Alley. Dr. Brodnax was a member of the department of anatomy of the Medical College of Virginia for thirty-three years.

SOCIAL WORKER (PSYCHIATRIC)

Applications for social worker (psychiatric) will be rated as received by the civil service commission at Washington, D. C., until June 30.

The examination is to fill vacancies in the veterans' bureau and in positions requiring similar qualifications throughout the United States.

The entrance salary is $1,860 a year. A probationary period of six months is required; advancement after that depends upon individual efficiency, increased usefulness, and the occurrence of vacancies in higher positions.

The duties will be to investigate history and environmental conditions of patients; to analyze and submit data to the physician to aid him in arriving at a definite diagnosis and in outlining a course of treatment; to consider, report upon, and treat the social environment to which a convalescent patient may go or be expected to go.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience; and a thesis or publications to be submitted with the application. Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the postoffice or customhouse in any city.

IODINE IN GOITER

By ROBERT KING BUFORD, M. D., F. A. C. S.
Charleston, W. Va.

The use of iodine as a preventive is not new, for we are told that the Greeks in 2000 B. C., knowingly employed iodine in the treatment of goiter.

Plummer, in studying and preparing cases of exopthalmic goiter for operation, found that these cases showed a marked improvement within 7 to 12 days following the administration of Lugol's solution. He believes that in exophtalmic goiter there is an over-secretion of an abnormal, uniodized thyroxic molecule.

The popular interest which has been aroused in the treatment of goiter by iodine has greatly increased the number of cases of iodine hyperthyroidism in every goiter clinic. Our clinical experience of a study of several hundred cases of goiter and over 600 thyroid operations has been in full accord with Plummer's impressions of the use of iodine.

Lugol's solution is used as a surgical adjunct in preparing the patient for operation. However, if used over a period of two weeks prior to operation the patient loses the benefit of the maximum improvement from the use of iodine. Patients receiving iodine before admission for operation do not improve on the preoperative Lugol's treatment as much as the cases never receiving iodine. Lugol's solution reduces the metabolic rate an average of 20 per cent properatively. There is a proportionate clinical improvement and the necessity for ligation is obviated in 75 per cent of the cases.

The percentage of immediate subtotal thyroidectomies has increased from 20 per cent to 90 per cent in cases following iodine and the increased extent of operation has been accompanied by less severe postoperative reactions.

In endemic goiter districts if every woman would keep her thyroid gland saturated with iodine during every pregnancy she would not develop goiter, nor would there be any tendency toward goiter formation in the thyroid of the child. If every girl would keep her thyroid saturated with iodine during adolescence from 11 to 16 years of age, inclusive, none would develop goiter.

Iodine is a specific for the prevention and cure of colloid goiter of adolescence, providing no adenomas are present. Adenomas should never be given iodine. Hyperthyroidism following the administration of iodine for a simple adenoma is a frequent observation necessitating surgical removal before the patient recovers.

It is my belief that iodine has no place in the medical management of goiter after 25 years of age. Bram, the greatest exponent of medical treatment of goiter in this country, strongly advises against its use. He further states that adenomatous goiters are surgical and not medical problems.

DR. LITTLEJOHN TO DIRECT RURAL SANITATION

The appointment of Dr. David Littlejohn as director of the division of rural sanitation of the state health department has been announced by Dr. W. T. Henshaw, state health commissioner. Dr. Littlejohn, who succeeds Dr. J. G. Townsend of the U. S. Public Health Service who has been transferred to the Pacific coast, brings to his new position wide experience in public health work in West Virginia as well as elsewhere. Appointed as city health officer for Bluefield in 1923 he served in that capacity until July 1925 when he was appointed director of the division of preventable diseases with the state health department from which position he has just been transferred to head of the rural sanitation for the state.

Dr. Littlejohn is president of the West Virginia Public Health Association and a fellow of the American Public Health Association.

The division of rural sanitation was created six years ago by the U. S. Public Health Service in cooperation with the state health department to help in safeguarding the health of all these citizens living in the rural

areas of the state, as it is estimated that 70 per cent of the population of the state is rural. Dr. W. V. Ziegler was appointed director, and one of his first problems was the reduction of the typhoid rate in the state, which was very high at that time, by securing protection for all water supplies.

To insure the same health protection to the citizen living in the rural areas as that afforded the city dweller, the establishment of full time county health units was urged. To date thirteen counties, Logan, Hancock, Preston, Gilmer, Harrison, Marshall, Roane, Ohio, Marion, Kanawha, Brooke, Wood and Boone have established this service affording health protection to one-fourth of the population of the state. Other counties are contemplating the addition of a full-time health service in the near future.

AMERICAN COLLEGE OF PHYSICIANS MEETS

The annual clinical week of the American College of Physicians was held in Cleveland February 21 to 25. Clinics were conducted in the various hospitals and at the Medical School of Western Reserve University. The next meeting will be held in New Orleans, February, 1928. The West Virginia physicians who registered for the sessions were as follows: Albert H. Hoge, Bluefield; E. W. Horton, Bluefield; G. H. Barksdale, Charleston; Morris L. Mendeloff, Charleston; C. A. Ray, Charleston; H. L. Robertson, Charleston; A. A. Shawkey, Charleston; Solomon L. Cherry, Clarksburg; H. H. Carr, Fairmont; Luther C. Davis, Fairmont; Charles W. Waddell, Fairmont; H. R. Yost, Fairmont; Oscar B. Biern, Huntington; F. C. Hodges, Huntington; Walter E. Vest, Huntington; Martin L. Bonar, Morgantown; Barrick S. Rankin, Tunnelton; R. A. Ireland, Charleston; Mr. Charles C. Warner, Charleston; Claude L. Holland, Fairmont; E. E. Clovis, Wheeling, D. A. MacGregor, Wheeling; Charles M. Bray, Morgantown; S. J. Morris, Morgantown; E. J. VanLiere, Morgantown; John N. Simpson, Morgantown.

At the convocation on Friday, February 25, the following West Virginians were admitted to fellowship: Martin L. Bonar, Morgantown; E. E. Clovis, Wheeling; D. A. MacGregor, Wheeling; Charles M. Bray, Morgantown; E. J. VanLiere, Morgantown.

VACANCIES IN VETERANS' HOSPITALS TO BE FILLED

The United States Civil Service Commission states that a number of hospitals of the veterans' bureau are sorely in need of occupational therapy aides in arts and crafts, agriculture, and trades and industrial occupations, and also physiotherapy aides, pupil aides, and assistants. These workers are needed in considerable numbers in connection with the rehabilitation of disabled soldiers and sailors.

It is stated that examinations for these positions are now open. Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board at the postoffice in any city.

BOARD OF OTOLARYNGOLOGY

The following examination dates have been assigned by the American Board of Otolaryngology: Washington, D. C.—Episcopal Eye, Ear and Throat hospital, Monday, May 16, 1927 at 9 o'clock; Spokane, Wash.—Saturday, June 4, 1927 at 9 o'clock.

DR. IRONS INJURED

Doctor J. C. Irons of Dartmoor, secretary of the Barbour-Randolph-Tucker Medical society and former councilor of the state association, is slowly recovering from a fall on the ice January 9. Both bones in his right ankle were fractured and Doctor Irons was in the Davis Memorial hospital, Elkins, for more than three weeks. He now is able to get about with the aid of crutches.

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C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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THE PRESENT STATUS OF PEPTIC ULCER *

By MURAT WILLIS, M. D., F. A. C. S.
Richmond, Va.

NUMEROUS FACTS tend to show that peptic ulcer is merely a local manifestation of of a systemic disorder. Ulceration of the intestines is of frequent occurrence in typhoid fever and tuberculosis; sharply circumscribed lesions located in the duodenum have been encountered in hemorrhagic disease of the new-born; in patients suffering from severe burns; and in those with diseased kidneys. Schiff states that a large proportion of those affected by chronic lead poisoning may manifest all the symptoms of duodenal ulcer and, upon operation, will be found to have a lesion resembling the latter in every respect. Von Bergmann interprets this observation of Schiff by assuming that the degeneration of the autonomic nervous system produced by the lead is responsible for the ulceration. In support of this assumption, he cites Singer, Reiter, and others to show that degeneration of the vagi may cause ulceration of the esophagus or the stomach.

Hurst, likewise, finds in a malfunctioning of the autonomic nerves the explanation for ulcer. According to him, all sufferers from peptic ulcer show a hypermotility and hypersecretion of the stomach; with the result that large quantities of an excessively acid gastric juice are discharged into the duodenum, where its irritant action gives rise to the formation of an ulcer.

Rosenow, on the other hand, adduces evidence which indicates that the cause of ulcer is to be found in the activities of streptococci with a power of localizing in the gastric wall. These organisms may gain entrance into the circulation from any one of a variety of foci, such as the tonsils, den-

* Read before the Central Tri-State Medical Society Huntington, W. Va., January 13, 1926.

tal apical abscesses; diseased gall-bladder; or appendix.

In addition to these theories, we have the Antipepsin Theory, Aschoff's Theory, The Theory of Inflammation and the Allergic Theory. Unfortunately, all of the above theories to explain peptic ulcer rest upon insufficient evidence and fail to account for all of the facts in connection with these lesions. Thus, if a malfunctioning of the autonomic nervous system is responsible for the production of ulcer, why is it that season plays such an important role in bringing about an accentuation of the symptoms? Why periods of remission over months and years? Though an excessively acid gastric juice is frequently encountered, this is by no means the invariable rule; hypo- or even anacidity may be present in gastric ulcer. The significance of foci of infection is not apparent when one compares the figures bearing upon the relative frequency of appendicitis, cholecystitis, and peptic ulcer. Thus, in females under twenty, ulcer is not encountered as often as in males of the corresponding age period, although appendicitis is about as common in the one as in the other. In the next decade, the frequency of ulcer in the male is probably four or five times greater than in the female, though there is no such preponderance of appendiceal involvement in the former. On the other hand, after forty, cholecystitis occurs in the female at least four times more frequently than in the male, with no increase in the incidence of ulcer. In the present state of our knowledge, one can only speculate as to the etiology of peptic ulcer; attractive as the various theories are, they remain only theories; further investigation is necessary before the cause actually responsible can definitely be stated.

Ignorant as we are concerning the etiology of ulcer, specific therapy is impossible and we are faced with the necessity of resorting to symptomatic treatment. Such being the case, we should carefully select those measures which, by experience, have been found best fitted to afford relief from the local disturbance without, at the same time, causing the patient to fall victim to an even worse fate. Can we accomplish this best by surgical or by medical means? This question, so fruitful of discord among the two branches of our profession, seems as far from settlement as in the early days of abdominal surgery; and it may be of profit to review briefly the present status of our knowledge concerning what may be effected by the resort to surgery or by subjecting the patient to medical treatment.

In the order of their severity, the commoner surgical procedures for the relief of ulcer are gastro-enterostomy, pyloroplasty, pylorectomy, and sub-total resection of the stomach. Gastro-enterostomy was the first of these operations to be extensively employed, and it is interesting to note the opposing opinions that have been expressed regarding its efficacy in the treatment of ulcer. So competent an authority as Moynihan makes the following statement: "When gastro-enterostomy is performed in suitable cases, the immediate mortality is very low, certainly less than 2 per cent, and the ultimate condition of the very great majority of patients most satisfactory."

In a recent article, Sherren discusses the value of gastro-enterostomy in the treatment of duodenal ulcer. According to him, the end results of this surgical procedure far exceed those obtained by any form of medical treatment, whether looked upon from the point of view of cure or of the risk attaching thereto. He further states that it is undoubtedly correct that the mortality of the medical treatment of chronic ulcers is vastly greater than the surgical. Up to January 1, 1924, he had treated 768 cases of duodenal ulcer surgically, chiefly by gastro-enterostomy, with a mortality of a little less than 2 per cent. He has been able to trace 500 cases operated upon prior to 1922; and is particularly gratified to learn that of this number 463 are well. He makes the important statement that "patients who go for two years without symptoms never develop them later."

No less optimistic is the view of Balfour regarding gastro-enterostomy as expressed before the Surgical Section of the A. M. A. in June, 1924. This author says: "In large surgical clinics where gastro-enterostomy is the operation of choice for chronic duodenal

ulcer, satisfactory results are reported in from 80 per cent to 90 per cent of cases." He has gathered information concerning the present condition of 1000 patients upon whom this operation was performed at the Mayo Clinic more than ten years preceding, with an operative mortality of 2 per cent, 88 per cent cured, and gastro-jejunal ulcer in 3.5 per cent.

Though dealing with a smaller series of cases, the statistics of Haggard and Floyd, are, essentially, in agreement with those of Sherren and of Balfour; although they had a mortality of 4.1 per cent in gastro-enterostomy and no reported secondary ulceration.

All surgeons do not appear to have been so successful in the treatment of ulcer by gastro-enterostomy as have been those just cited. In discussion of Balfour's paper, Strauss stated: "There are, however, clinics that do not report such a high percentage of excellent results from gastro-enterostomies. For instance, recently in Schmieden's clinic in Germany, out of 250 gastro-enterostomies, 50 per cent were found to be failures." Strauss appears to incline strongly to more radical measures; believing that it is essential in many cases not only to hasten the emptying time of the stomach but also to remove the underlying pathological condition responsible for the ulcer. Clairmont, likewise, reports only about one-half of his cases as cured after gastro-enterostomy; while Sauerbruck, in a series of 70 cases, obtained good results in only 36 per cent.

Lewisohn seriously questions the efficacy of gastro-enterostomy. He states this operation has been employed for over thirty years, and if it had proved entirely satisfactory in that length of time, there would not be the gradual increase in the number of surgeons advocating more radical measures; a trend which points strongly to the conclusion that failures following gastro-enterostomy are very frequent. Lewisohn believes that the generally accepted figure of 5 per cent for the incidence of secondary ulceration after gastro-enterostomy is entirely too low, due to imperfect analysis. Many surgeons are unaware of the ultimate fate of a large proportion of their patients; considering "only the few patients who come back to their clinic for re-operation." He states a perfect follow-up system is necessary before positive conclusions can be drawn; communication by letter is most unsatisfactory; the patients should be seen and examined at frequent intervals.

By a follow-up system which certainly seems to approximate his ideal in its efficiency, Lewisohn has ascertained the results following gastro-enterostomy performed by himself and his associates at Mt. Sinai during the years 1915-20. . In striking contrast to the experience of Sherren, Balfour, and others, Lewisohn found that gastro-enterostomy, with or without exclusion, effected a perfect cure in less than 50 per cent of their cases. Even more disheartening was his experience as regards secondary ulceration; this was noted in *over 34 per cent of his cases.*

Mr. Arthur F. Hurst, physician to Guy's hospital, in an address delivered at the Hospital Saint-Michel, Paris, makes the following observations in the discussion of the treatment of duodenal ulcer: "I now advise operation very rarely—only when secondary pyloric obstruction is present or when repeated relapses occur in spite of every precaution. I am further persuaded in this course because, as the years pass, the number of patients I see who are suffering from relapses or unpleasant or even dangerous sequels of gastro-enterostomy steadily increases. The result of the operation may be unsatisfactory from the beginning; more commonly only after months and sometimes even after years do these sequels appear. It is a remarkable fact that during the last two years the number of private patients who have consulted me for symptoms which have followed a gastro-enterostomy performed for various reasons by various surgeons, many of whom may be ranked among the most skilful and experienced in Great Britain, is approximately the same as the number of those suffering from gastric and duodenal ulcer."

It is a point of some interest that the surgeons who now condemn the operation of gastro-enterostomy almost without exception have a more radical procedure which they

wish to substitute in the treatment of peptic ulcer. As Lewisohn points out, there is a growing tendency among surgeons both abroad and in this country to abandon gastro-enterostomy in favor of sub-total gastric resection; and, in two recent papers, excellent reasons are advanced for preferring the latter operation. Physiologists still maintain that hydrochloric acid plays a role of some importance in digestion; and evidence is accumulating which indicates that anacidity may lead to a radical alteration of the intestinal flora; putrefactive organisms gaining the ascendency. Some observers have gone so far as to suggest that the cause of pernicious anemia lies in this change in the flora of the intestines; and, if relief from the ulcer symptoms is to be gained only at the risk of incurring a fatal disease, and to say nothing of the increased immediate operative mortality, it is unlikely that the operation of subtotal gastrectomy will become widely popular. Naturally, one is not justified in making the positive claim that serious or fatal results will follow the removal of the acid-secreting cells of the stomach, but the available evidence is such as to make us seriously ponder this possibility. This is especially true when we realize that subtotal gastrectomy for duodenal, gastric and gastro-jejunal ulcer has only been practiced in very recent years. I am aware of no considerable series of cases in which this operation has been done that have been studied over any period of time.

As surgeons, if we frankly and honestly face the facts, we must acknowledge that surgical treatment of peptic ulcer is radical and that it fails in a considerable proportion of cases to give the desired results. What has medical therapy to offer? Is it ever possible to accomplish an actual "cure" of an established ulcer by merely medical means, or is the best we can hope for under this form of therapy temporary relief?

That peptic ulcer may heal spontaneously is now established beyond a shadow of a doubt. Thus, Hart has found that from 8 per cent to 13 per cent of all adult bodies coming to autopsy show open ulceration or the scars of healed peptic ulcers; and Stewart, detailing the necropsy findings at the Leeds General Infirmary for the years 1910-22 inclusive states that "healing of gastric and duodenal ulcer is a common event." Most instructive are the observations of Crohn, Weiskopf, and Oschner. These authors studied ulcer patients clinically and roentgenologically; subsequently, the larger proportion of their patients were subjected to the operation of sub-total gastric resection. From this study, the following points seem established:

The ulcer forms rapidly, probably within a matter of weeks. In one patient, the duration of symptoms was of only three weeks; at operation, there was encountered a gastric lesion that "had all the appearances of a chronic penetrating ulcer." They state " * * * * we are led to believe that ulcers form rapidly, probably within two or three weeks, and, having by that time achieved a given size, no longer extend their circumference * * * *. This also would agree with the idea that perforation, as well as hemorrhage, usually are observed in cases with a history of only a few days or a week; namely, in the stage of rapid penetration." The shortest history obtainable in a case of duodenal ulcer was four months; here, "a fully developed ulcer" was noted at operation.

Next, healing takes place under medical therapy, or without any treatment, in a large proportion of cases. Of twenty patients examined roentgenologically during the course of medical therapy, ten showed a complete disappearance and two more showed a partial disappearance of the niche; the symptoms being relieved coincidentally with the change in the roentgenogram. The authors say that "Our own small series includes some patients with the most difficult examples of chronic callous ulcer, such as are known to haunt for years the wards and out-patient departments of large city institutions." According to them, Ohnell and Buscher have reported a far larger number of successful cases; the latter observer noting a disappearance of the niche in 71 of 100 cases treated. Crohn and his associates suspect that even in their unfavorable material "It may be that with a more persistent and more carefully supervised the-

rapy, the result would have been better." Nor were they compelled to rely merely on the suggestive evidence afforded by the roentgenological study; in seven of the patients subjected to sub-total resection of the stomach, the lesion had almost or entirely healed when the operation was performed.

By a study of a series of cases that he admits is too small to be more than suggestive, Forsyth has investigated the relative efficacy of surgical and medical therapy in peptic ulcer. The patients included in his series were among the beneficiaries of an assurance society; they were all medical men, and they were free to select the method of treatment. Of the 59 cases, 33 (56 per cent) were treated surgically; 26 (44 per cent) chose medical treatment. The immediate mortality among the surgically treated patients was 9 per cent; none of those treated medically succumbed during the period of observation. After lapses of time ranging from one to ten years, 36.3 per cent of the surgically treated patients suffered relapse; while 38 per cent of the medically treated cases had a similar experience. An examination of all the cases confirmed the view that the period of disability is greater after surgical than after medical treatment.

In a paper read recently before the Medical Society of Virginia, a colleague of mine ably advocated the surgical treatment of peptic ulcer, because he believed that "when one undertakes a cure of peptic ulcer by medical management, the patient should be informed that he may possibly develop cancer, he may bleed to death, or he may have a fatal perforation." How frequently one encounters similar statements in discussions of ulcer therapy; in the hands of the medical man, the patient's future is dark and uncertain; if, however, his judgment is so discriminating as to lead him to entrust his fate to the surgeon, he is assured of immediate and permanent relief. Certainly, it would be to the material benefit of all of us who practice surgery to become convinced of this, but honesty impels me to recognize that many unfortunate occurrences may be seen following the operative treatment of uncomplicated peptic ulcer about as frequently as after medical treatment, although there can be no question as to the skill of the operator.

First, there is a primary operative mortality variously estimated at from two per cent to 10 per cent; the number of deaths from this cause far exceeding all those arising from duodenal cancer, hemorrhage, or perforation. Recurrence of the symptoms from a failure to cure the ulcer may be seen just as often after gastro-enterostomy as after medical treatment, if care is taken to follow the patient for a sufficiently long period and to rely upon a personal interview and a careful examination from toms from a failure to cure the ulcer may condition infinitely worse than that associated with the original ulcer, may arise in a large proportion of patients subjected to gastro-enterostomy. By post mortem examinations, Steward found this complication present in 18 per cent of a small series of cases; Clairmont 28 per cent, Habers 20 per cent, Karl Myer at Cook County hospital 25 per cent, DeTakats 18 per cent; by a careful follow-up system, Lewisohn encountered it in over 34 per cent of the cases where gastro-enterostomy had been found. Nor are hemorrhage and perforation disasters encountered only in patients denied the benefits of surgery; both have been reported as causes of death after operative treatment of an ulcer. It is indeed seldom that temporary relief fails to occur in any ulcer patients subjected to hospitalization; after surgery, are we to attribute all of this relief to the scalpel, or is a part of it to be ascribed to the pre- and post-operative rest in bed, regulation of diet, and alkali administration? Sub-total gastric resection may afford relief from the ulcer symptoms, but it deprives the patient of an agent considered essential for the normal functioning of the digestive processes; and a complete removal of the acid-secreting cells may, according to some, eventually lead to the development of a surely fatal disease. As ignorant as we are of the etiology of peptic ulcer, one cannot forbear comparing gastric resection for the relief of duodenal ulcer to resection of the sigmoid for hemorrhoids, or amputation of a leg for the cure of a syphilitic ulcer, or in other

words, the application of capital punishment for a misdemeanor.

In conclusion we must remember that peptic ulcer in its life cycle is prone to short or long periods of remissions, and that this fact is responsible for much of the confusion over the so-called cures following surgical therapy, medical therapy or no therapy. Knowing this and nothing of the etiology of the disease there is some question whether any of these patients should ever be pronounced permanently cured.

In my experience perforation is the most serious and one of the commoner complications of peptic ulcer and it occurs most frequently in patients with a short and atypical history and in cases where the diagnosis had not been previously made.

Experience indicates that in *chronic ulcer of the stomach,* in *duodenal ulcer* with *pyloric stenosis,* in *some cases of hemorrhage,* and obviously, after *perforation of any ulcer, surgery* is *clearly indicated.*

From visits to the various surgical clinics, from a study of the current literature and from my own clinical experience the conclusion is inescapable that there is *justly* an increasing dissatisfaction with our present surgical methods in the treatment of uncomplicated peptic ulcer.

Unfortunately, the close co-operation between surgeon and internist that has so often been invoked in papers on this subject is far from a reality. It is too apparent that many of the views expressed are partisan. Until more knowledge is gained as to the nature of peptic ulcer progress in treatment is only possible through an agreement as to principles of management and close adherence to these principles by all concerned.

EARLY PULMONARY TUBERCULOSIS *

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THE TREATMENT of Pulmonary Tuberculosis depends, in a large measure, upon its early recognition. It is, therefore, important that we pay particular attention to the ill defined symptoms of the beginning stage. Frequently the picture presented is so vague that only through painstaking procedures are we able to arrive at an accurate diagnosis. In the early stages it may easily be confused with syphilis, myocarditis, gastric or duodenal ulcer, focal infection, hyperthyroidism, neurasthenia and malaria.

In obscure cases we should not make a definite diagnosis without going through the following procedures: a carefully taken history, observation of the clinical course for a period of at least ten days; a thorough physical examination (including repeated chest examinations), laboratory examinations, and X-ray pictures.

An accurate clinical history is of great importance in early tuberculosis. Quite frequently in early cases, there are no definite physical signs or X-ray findings and the sputum is repeatedly negative. It is in such cases that we rely upon a carefully taken history, together with an intensive study of the constitutional symptoms in making a diagnosis, often resorting to differential diagnosis by process of elimination. H. R. Landis, in emphasizing the importance of a clinical history, states that from the history alone the vast majority of cases of early tuberculosis can be recognized definitely, or at least the presence of the disease can be strongly suspected. Of course we should not make a diagnosis on the history alone, without assembling and correlating the clinical data, the X-ray and laboratory findings, with a study of the symptomatology and course of the disease, combined with the findings on repeated physical examinations of the chest. Frequently tuberculosis is neg-

* Read before the West Virginia State Medical Association, Morgantown, May 25, 1926.

ative because the deposit of a few early tubercles with an accompanying catarrh, will not cast a shadow on the plate. Similarly the physical signs of the chest are sometimes indefinite and the sputum negative.

As a rule the presenting symptoms fall in one of the following groups: "The chest pain", "nervous exhaustion", "cold and cough" and "abdominal distress" groups. The symptoms most commonly pointing toward the chest group are pains caused by pleurisy, which may be direct or referred, (pleurisy plays an important part in diagnosis, as the majority of pleurisies are of a tuberculous nature and a large percentage of patients with pleurisy finally develop tuberculosis).

A cough, which as a rule, is just enough to attract the patient's attention, is often complained of. Or, there may be a frequent clearing of the throat of which the patient is unconscious. This information may be obtained from some member of the family or a friend. The cough precedes expectoration in most cases by weeks or even months. The patients complain of being subject to frequent colds which do not clear up easily and which often leave a nervous cough that hangs on indefinitely.

Hemoptysis, unaccompanied by marked constitutional symptoms in people under middle age, means tuberculosis, except in mitral stenosis.

The nervous exhaustion group are the chronic complainers who are often classed as neurasthenics, after careful examination fails to find any organic disease.

Gastric disturbances are present in a large percentage of early cases. The symptoms most frequently complained of are, frequent eructation of gas and sour fluid, sense of fulness and weight following meals, nausea and vomiting, together with palpitation of the heart. These may or may not be accompanied by fever which is one of the earliest and most important symptoms. This is often overlooked unless a two hour record is kept. In a majority of cases a persistent loss of weight is noticed together with fatigue in the afternoon, due to auto-inoculation.

In studying the constitutional symptoms for ten days, special attention should be paid to the record of temperature and pulse at two hour intervals and the effect of graduated exercise on them. In testing the reaction of graduated exercise it is best to obtain the service of a known non-tuberculous person to act as a control to check against a physiological rise. The control and the suspected case should take the same amount of exercise and their temperature and pulse recorded at the same time. This record should be taken immediately preceding exercise, fifteen minutes afterwards and one hour after return. After walking one-half hour a rise of one degree or more and a pulse rate out of proportion to the rise in temperature, which fails to return to normal at the end of one hour is highly suggestive of tuberculosis. If the rise is physiological the temperature and pulse return to normal within an hour. This is a valuable aid to diagnosis when used in conjunction with the other findings.

In a physical examination the patient should be examined completely from head to foot, paying especial attention to the sinuses, teeth, tonsils and heart. At times there is some focus of infection present which resembles tuberculosis and clears up under treatment.

As Osler says, "If you know syphilis in all its manifestations, you know medicine." We may find evidence of a syphilitic infection—such as enlarged inguinal or epitrochlear glands, secondary eruption with other secondary signs such as mucous patches, pharyngeal injection and a slight rise in temperature. In lues the patient's nutrition as a rule is good, while in tuberculosis it is not. A negative Wassermann does not rule out syphilis, so frequently we must rely upon the clinical history and physical findings to differentiate these two closely allied conditions. We should always bear in mind that these two conditions may be found in the same patient as the immunity is lowered by an active syphilis, thus reactivating a latent tuberculosis.

In myocarditis, there is often a history of an acute infection, such as tonsillitis, influenza and acute articular rheumatism. On

physical examination we find a low blood pressure, arrythmia, tachycardia (the heart being more responsive to stimuli), feeble heart sounds, mitral murmurs, etc.

The fixed point of tenderness, X-ray findings, stool and gastric analyses clinch the diagnosis in gastric or duodenal ulcer.

In hyperthyroidism, the nervousness of the patient, tachycardia, slight rise in temperature, fatigue, loss of weight and strength are strongly suggestive of tuberculosis. However, in the latter we do not find the exopthalmos, low blood pressure, von Graefe's and Stellwag's signs, tremor, and high basal metabolic rate. By careful observation a correct diagnosis should easily be made in this case.

In malaria, the blood pictures should clear up the diagnosis. I would like to illustrate this point with the history of a case. In November, 1925, a patient moved here from Gary, Indiana, with a diagnosis of malaria. He called me in a few days after his arrival. He had been sick since September. He was having chills followed by a fever every day at the same time. He gave no history of ever having been in a malarial country. Examination of the blood immediately following one of these chills revealed no malaria plasmodia. Examination of the chest showed advanced tuberculosis. The sputum remained negative. He died in December of myocarditis.

On examination of the chest, inspection reveals a deficiency of the subcutaneous fat, with a drooping of the shoulder on the affected side, together with an atrophy and rigidity of the muscles overlying the lesion. There is a slight depression of the supra and infraclavicular fossae on the involved side, with flattening of the upper lung, together with a lagging on deep inspiration over the site of the lesion.

On precussion we find that the resonant area in the supraclavicular and supraspinous regions is not so wide as on the other side. The apex on the affected side is retracted, the height of resonance extending lower than that of the opposite side. Generally there is slightly impaired resonance over the area of infiltration which is best brought out by comparing the percussion note of the two sides at the same level.

Auscultation shows the most frequent abnormal variation in breath sounds to be the granular type of breathing, indicating a partial stenosis of bronchioles supplying the affected part of lung. Feeble breathing is another common type of breath sounds heard over the involved lung. This is caused by occlusion of the bronchioles supplying the infiltrated area. A later sign in early involvement is prolonged expiration caused by the loss of tissue elasticity. Over the area of infiltration the whispered voice is transmitted more clearly. In a strictly minimal lesion, rales are not heard except at most, only a few dry crackles heard after cough. This is best produced by having the patient take a full inspiration followed by a forced expiration and then cough before inspiration.

The following laboratory tests should be made routinely in obscure cases: Wassermann, urinalysis, sputum examination, hemoglobin, red and white blood count and if indicated a differential count. The tuberculin test is of little value in diagnosis. It should be remembered that in its use there is danger of reactivating a latent lesion. If the physician waits to make his diagnosis until tubercle bacilli are found in the sputum a grave injustice is done the patient because in the early stage the secretion expectorated is scanty or absent in amount.

We should not rely on X-ray alone for diagnosis. In the early stage it sometimes helps us locate a deep seated lesion; however, quite frequently the X-ray in early tuberculosis is negative while the clinical data is sufficient to permit us to make a diagnosis of clinical tuberculosis. Therefore, the X-ray should be used in conjunction with other data collected in helping us to arrive at a definite diagnosis.

In treating tuberculosis the most gratifying results are obtained from those gotten in the early stage. It is not necessary to go into detail as to treatment. In general it consists of plenty of rest, good food, fresh air, sunshine and graduated exercise.

A general treatment with which I have gotten good results was originated by Dr. Rosen of Moscow and brought to this coun-

try by Dr. Magill of this city. It was first brought into practical use in this country by Dr. Magill, then of Elkins, Dr. C. H. Hall and Dr. Ben Golden of Elkins. It consists of 250 to 300 c.c. of 1.6 per cent solution of calcium chloride intravenously on alternate days for fifteen doses. The solution is made from the crystalline calcium chloride. It is given by the gravity method, starting with a temperature of 101 degrees which generally comes to body temperature before it is completed. If given too hot, too cold or too rapidly the patient is likely to have a reaction, chills, nausea, vomiting, etc.

It has been a long known fact that calcium is of value in the treatment of tuberculosis. It has been used in chemical composition with creosote which is not injurious to the stomach with very gratifying results and should deserve wider use.

In conclusion allow me to remind you that there is no one procedure alone by which a diagnosis can be made, but we must rely upon all clinical data, laboratory and X-ray findings, before coming to a definite diagnosis. The patient's future depends upon an early diagnosis and after that is made, the treatment is comparatively easy.

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS

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IN ORDER to understand tuberculosis it must be kept in mind that tuberculosis exists as an *infection* and as a disease. By infection we mean the entrance and lodgement of the tubercle bacilli beyond the normal barriers of the body.

That it exists as a *disease* where the unsuccessful efforts of the blood serum and body cells to combat the infection is manifest by clinical and pathological symptoms and signs of disease.

There are only two ways clinical tuberculosis (tuberculosis as a disease) can develop:

First—Through the uninterrupted progression of the foci from the time of infection.

Second—Through the advance, or the renewal, of activity of foci which have existed perhaps unknown to their possessor for variable lengths of time and that may be for years.

More than two centuries ago Richard Morton surmised that a man acquiring tuberculosis must have in his tissue some natural defense against it, otherwise on account of the universality of the disease the whole race would soon be swept from the face of the earth. Now the fact of these defenses has been amply confirmed. In part, they are inherent, in part acquired from actual infection by, and contact of the tissues with the tubercle bacillus.

It has become patent that the inherent capacity to resist infection is feeble, especially if it is repeated at frequent and short intervals, or if any one infection is large, that is if numerous tubercle bacilli gain access to the body at one time. Equally, it is agreed that acquired immunity, that is resistance conferred through the presence of small or weakly virulent infections is one of the chief protections of civilized people against complete annihilation by the germ.

With the above facts on our minds, we will proceed with our study of tuberculosis. As you probably all know, it was back in 1882 that Koch first discovered the tubercle bacillus. This was followed with numerous experiments made by him in an endeavor to find some serum or other preparation that would cure tuberculosis and culminated in his "tuberculin" in the early nineties, which did not cure. One of these experiments gave somewhat puzzling results, which at first did not attract much attention, but later studies have shown it was of great importance.

With the FIRST injection of the usual laboratory foci of live tubercle bacilli, the

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* Read before the Academy of Mediline of Parkersburg, November 8, 1926.

reaction is very slow but regular and definite. Microscopically the reaction begins in a few hours after the implantation. By implantation, we mean where the bacillus finds its final lodging place. At the end of the eighth to the fifteenth day the *tubercle* can be seen. They are few and discrete. There is a lack of inflammatory phenomena, with a predominance of cell and tissue proliferation and, lastly, there is absence of toxic symptoms. The animal is not sick which is also the reason that first infection is so seldom seen by the physician in the child.

If another injection of the same or a smaller dose is used, say after the twentieth day, the series of events is entirely different. If given under the skin, there is inflammatory redness and swelling, more vigorous and accelerated cell proliferation, all of this occurring rapidly. At the point of infection an abscess forms, which breaks, and discharging its contents, leaves an ulcer which slowly heals. The animal is sick and shows marked toxic symptoms.

It took some years before the importance of this, which is known as Koch phenomenon, was appreciated. The body had been sensitized by the formation of the tubercle from the first infection. In other words, infection with tubercle bacilli endows the animal with something besides the tubercle, it trains the tissues to react with inflammation and the body to react with intoxication, and thus confers a certain amount of specific immunity. I shall quote freely from Dr. Kraus: "Anatomic tubercle the result of the introduction of tubercle bacilli so changes the body that its tissues react differently from the normal to the application of any product of the tubercle bacillus, or the reintroduction of living or deal bacilli." This is called allergy and it plays a prominent part in all the phenomena of tuberculosis.

When the body has been sensitized by a previous implantation, no matter how far back this infection may have been, the allergic condition makes itself manifest when there is a new infection due to the implantation of bacilli from without, or a spread of the bacilli from within. Instead of the leisurely non-inflammatory reaction, there is an extreme rapidity of tissue changes occurring within a few hours where the new bacilli locate. There is an intense inflammatory reaction, redness, swelling and exudation into the surrounding tissues. So violent is this reaction that even tissue death may occur. Also, there is a reaction at the site of the old foci, its severity depending on the amount and firmness of the connective tissue surrounding the old foci.

The Von Pirquet test is due to this allergy, and it is from this test that we have learned that the first infection usually occurs in childhood. But few children under two or three years of age respond to the Von Pirquet, and those who do are usually in direct contact with a tuberculous father, mother or some other member of the family. From the third year on an increasing number react until at the sixteenth or seventeenth year, 70 per cent of all urban children show that they have been infected.

Now let us pause a moment and see what we have already learned. We find that the majority are infected before the seventeenth year; that in the civilized races, due to some inherent immunity, disease does not as a rule develop; that the primary infection gives a certain amount of specific immunity, and that this specific immunity meets the germs which may be introduced from without, or spread from some foci, within the body at once with severe inflammatory reaction. We also know that there must be some other form of immunity by which germs introduced from without are destroyed. We can also draw the conclusion that the disease tuberculosis, which is most prevalent from the twentieth to the thirty-fifth year, is due to, either single massive infection, or to frequent infections at short intervals; or in *most cases* due to the breaking down of the body defenses and allowing the germs to escape from some foci of childhood infection.

Now let us continue to trace this tubercle bacilli infection. It is not like an air borne germ which multiplies with extreme rapidity in the blood and overwhelms the body with toxic symptoms. The bacilli usually enter the body in small numbers. Perhaps, only

one or two become implanted, and it is only in rare cases that large numbers enter the body at one time. The bacilli practically always enter the body through the nose or mouth. Let us suppose that it is first deposited on the lining of a bronchial tube. From there it is most likely expelled by being caught in the bronchial mucus and expectorated, but if it finds a lodging place, it is engulfed by a phagocyte and swept along in the lymph stream to be arrested in the nearest lymph node to be destroyed or to multiply and spread to the parenchyma, or it may not find a permanent place to develop until it lodges in the large lymph glands at the hilus. Wherever it is first permanently arrested, the tissues react and we have the formation of a tubercle.

The tubercle is the first effort of the body to protect itself and in the first infection is due to the natural immunity all people possess. Any foreign substance may produce more or less the same effect from initiation, but the tubercle of tuberculosis differs in its cellular structure and subsequent changes due to its containing live bacilli, reproducing themselves and forming toxins.

We now have a bloodless tissue formation about as large as a grain of rye and the bacilli held within it. The thickness and density of this tissue may vary, at any rate as long as it holds. The body has the germs under control. We may become infected but remain free from clinical tuberculosis. Fortunately, for the most of us, this condition holds through life.

I shall not take up the study but only give the end results.

(*a*) Connective tissue cells form around and may push into the tubercle, gradually contracting until you have a scar left, with the bacilli destroyed.

(*b*) You have what is called caseous degeneration and this condition may go through three changes.

First—The caseous material absorbed the surrounding connective tissue contracting and you have a scar.

Second—The caseous material becomes calcified. In all of the above conditions you have an arrest or cure.

Third—The caseous materials becomes liquified. The tubercle breaks open and its contents in which are many live bacilli is discharged and you have an extension of the disease.

As I said in the first part of my talk, this is one of the two ways clinical tuberculosis develops, and almost the universal way in the adult; that is, by the breaking down of a tubercle located in the tracheo-bronchial glands, the result of a childhood infection, the discharged bacilli being carried to the lymph channels, progress slowly along these channels, due to the sluggish movement or stasis of the lymph flow, and usually follow this or these channels to the upper part of the upper lobe, for it is characteristic of lung infection to extend to the surface.

We know that in the adult it is the upper part of the upper lobe where we usually first detect the disease, and that it is this part where we have at any rate at first the greatest pathological changes. We know that this part of the lung moves less in the respiratory movements and is frequently further restricted by the early formation of pleural adhesions, all factors in the stagnation of the lymph flow, and for this reason is especially the seat of large caseations and cavities. We also know that the paravertebra portion of the upper lobe has very little movement, thus favoring the extension of the bacilli along the lymph channels in that portion of the lung. During the progress of the bacilli along the lymph channels which usually takes weeks or months, as a rule, but few tubercles are formed.

In the most favorable cases but a single line can be seen that proceeds straight upwards through the paravertebra portion of the upper lobe. In other cases excursions may be made collaterally and also there may be considerable involvement of the blood vessels and bronchi, which accompany the infected lymph channel. It is these collateral excursions which cause the deeper part of the lung to be diseased, for these excursions can produce pneumonia foci. These excursions may be quite extensive or only extend a short distance from the infected lymph channel.

This is what is meant by peri-bronchial tuberculosis, and the X-ray shadow may be

a narrow straight line from the hilus to the surface or broad and extensive bands. As a rule the excursions from the lymph channel in the early stages are not extensive and but few tubercles are formed along the lymph channel, but with each formation of new tubercles, during the process of the bacilli toward the surface, you have the symptoms due to allergy.

This accounts for the early symptoms: tired feeling, loss of flesh, periodic rise of temperature *et cetera*, which frequently occur months before there is tubercular formation at the lung surface that you can detect by the stethescope. The severity of these symptoms depends on the number and frequency of the new tubercle formations. The symptoms then depend upon two things.

First—The reaction due to the tubercle bacilli and its products-symptoms called toxic symptoms.

Second—Those due to anotomical changes. The first are manifest long before the second and may be continuous to the end. More often, however, they are subject to remissions which vary from short to long periods of time, and more frequently than not, especially under proper treatment the disease becomes arrested before it ever reaches the surface of the lungs and rales become evident.

This fact makes it rather hard on the physician who diagnoses these early cases, as the laity still have the classic picture of a consumptive in their minds. When the patient gets well instead of developing this picture, the physician is considered to have made a mistake in his diagnosis, and this cannot be avoided until both physician and the general public understand more about the course of the disease.

I shall speak of these early symptoms as near as possible according to the frequency with which they have been brought to my notice in my examination of over three thousand cases in West Virginia. The most frequent symptom that causes the patient to seek his physician is *loss of weight*. It is best to learn from the patient what is his normal weight, rather than go by the weight for height and age chart. I pay but little attention to loss of weight which has occurred over several years, but consider of great importance a loss of 10 to 15 pounds during the previous three or four months and unless I can find some other cause put it down as a symptom to be correlated with my other findings.

The next in frequency is the tired feeling. The patients will say that tasks which were easy before, now exhaust them. They have no pep and particularly lay emphasis upon being so tired in the morning, more so than when they retired. During the afternoon they usually feel better. Note that the morning hours are usually stressed. In this connection, loss of strength and weakness may be featured.

Pain—Many patients seek an examination on account of chest pains. This I consider an anatomical symptom, and probably does not occur until tubercles have formed near the surface of the lung, or in the pleura. Therefore it is not an early symptom and you should also hear rales. I am aware that Pottenger considers irritation of the sympathetic nerve may cause a tired feeling or pain in the shoulder girdle of muscles, but that is so indefinite that I have found it never helps in making a diagnosis. I always have the patient indicate the location of pain and use the stethescope very carefully over the area designated, and unless I can hear rales or find dullness on percussion, assure the patients that the pain is located outside of the pleura or is due to the stretching of bands of adhesions left from an old pneumonia or influenza.

But I never fail to make a careful examination so that the patient will not feel, that what to them has caused so much apprehension I have passed over lightly.

Cough—Strange to say cough is not a symptom that causes a patient to seek an examination, at least not until he has had other symptoms, due to toxemia. I consider cough an anatomical symptom and the patient to have had several extensions before it develops. The cough at first may be unproductive—a dry cough and is due to reflexed irritation. And when you have productive cough it is due to the location of tubercles in or near a bronchus. From this

you can understand that the character of sputum in the early stages may be mucoid, muco-purulent, or purulent, although it later on becomes purulent. And you will not find tubercle bacilli until the body in its endeavor to get rid of the invader empties a tubercle into a bronchus and this in the early stages may be at infrequent intervals, hence I am not satisfied with one negative sputum examination but advise four or five a day apart and all after the first to be made by the antiformin method. Many patients who on questioning I find answer the cough is not so much.

A cough as a clearing of the throat, or rather the trachea, and what they bring up to be thick and jelly like, usually blue white or streaked by coal smoke. Some of your books consider this an early symptom of tuberculosis. I have never found it so. In this connection it might be well enough to speak of hoarseness. I do not consider this an early symptom but as a secondary anatomical symptom, due to the irritation of the larynx from excessive coughing. The hoarseness due to tubercular laryngitis only occurs long after the disease has made itself manifest in the lungs.

In hoarseness always make an examination with a laryngeal mirror. I have found in a number of cases the hoarseness or loss of voice to be due to specific disease and in one case due to a cancer.

Hemorrhage is not an early symptom nearly as frequently as I would wish, for I know of nothing that will cause a patient to seek his physician so quick, as the alarm caused by the sight of blood.

Early hemorrhage is usually due to the rupture of a tubercle located in the walls of a blood vessel, later hemorrhages to the rupture of a vessel in the walls of a cavity. In the fatal hemorrhages these cavities are usually located near the hilus.

When I speak of early hemorrhage, I mean a teaspoonful or more of frothy blood. When the blood is of small amount and not frothy, I always suspect it may be from the nose or teeth. Blood streaked sputum should be considered with the other findings in making a diagnosis, but very frequently is not due to tuberculosis.

I have no hesitancy in making a diagnosis of pulmonary tuberculosis when the patient gives a history of having coughed up a teaspoonful or more of blood from the lungs, unless I can find some other cause such as pneumonia, influenza or heart trouble.

There is one thing you will find, that active tuberculosis does not always follow a hemorrhage. This is due to the fact that when the tubercle in the walls of the blood vessel is ruptured, there has been sufficient blood expelled to wash out the detritus and bacilli, so no new foci are formed. This is exceptional.

Digestive disturbances due to the toxemia, are frequently among the early symptoms, as is the loss of appetite or more frequently the complaint that food does not seem to do them any good.

Suppression, or scanty menses should also be correlated with your other findings.

Now the two symptoms so important to the physician, pulse and temperature, are rarely if ever the cause of a patient coming to me for an examination.

Let me here repeat, there are few if any bacilli in the blood. There are few in the lymph stream of the lungs, except when a tubercle ruptures. The most of the bacilli have been surrounded by body cells, thus forming tubercles, and it is due to the escape of the poison through the walls of these tubercle or to the rupture of these walls, that the toxic product gets into the circulation. From this you can understand that the amount of toxic products taken up depends on the character of the walls of the tubercle and the force and rapidity of the blood and lymph stream as well as the size of the foci.

Fever is the most important and constant symptom in tuberculosis, and from its study alone, we can trace with reasonable certainty the progress of the disease from start to finish.

The early febrile manifestations consist of a slight elevation of the temperature of one to two degrees, particularly after moderate exercise. This occurs every day or every two or three days. As a rule it subsides after several weeks' rest in bed. When the disease continues to spread the temper-

ature is moderately high, and may be continuous, remittent or intermittent.

The early febrile manifestations of a slight afternoon rise is characteristic of tuberculosis, but is not exclusively met with in this condition, as the temperature is due to the absorption of a toxic product, of course other foci of infection should be sought for, and if none can be found, suspect tuberculosis.

To my mind the most important thing to note is the effect of exercise. Have your patient take the temperature and then walk for a mile, taking the temperature on returning. If it is up, they should rest for half an hour and then take it again. Exercise will frequently cause a rise in healthy individuals, but by resting half an hour it should go back to normal. Not so in the tuberculous. The exercise causes the blood to circulate more forcible and more rapid, also it causes greater respiratory movement which increases the lymph flow, consequently there will be greater absorption of the toxins.

Absence of fever is an indication of improvement, and each time there is an exacerbation, it usually means a fresh extension of the disease.

Very frequently the morning temperature is subnormal, showing a rise at any time in the afternoon or early evening, and it may last but a short time. Therefore, for diagnostic purposes, the thermometer should be used every two hours. It is only by doing this that you can detect these slight oscillations that are present in early tuberculosis. This should be done for a sufficient number of days to obtain a good idea of the temperature curve.

Remember that with your patient in a state of rest, the passing of the toxins into the circulation may be but little or none at all. Also, that many patients have considerable toxic immunity.

I have often seen patients on rest go for days without any temperature and rapidly increase in weight and yet my stethescope would show no apparent improvement, or the disease was slowly progressing. A walk of half an hour would send their temperatures bounding. Fat does not spell fibrosis. So check up with your stethescope. Nevertheless you may take it as a rule that high temperatures mean rapid progress of the disease, with new areas of lung involvement, and absence of temperatures spells improvement. One important thing is that in the fever due to tuberculosis the desire for food is unimpaired, but that desire is quickly satisfied.

I feel that more attention should be paid to the pulse as palpitation and an increased pulse rate are at times among the first symptoms. The pulse is accelerated far out of proportion to the fever and this is an important point that should help in making a diagnosis. You will find the pulse fully as delicate an index showing toxemia as the temperature if not more so. In most cases, long after rest in bed has brought the temperature down to normal, the pulse will remain in the nineties, only to shoot up on the slightest exertion. There is no disease in which the pulse is so unstable as in tuberculosis.

In this connection there is one very important thing, a point that will be of great help if kept in mind. *The blood pressure is low.* So important is this that some of our best diagnosticians hesitate to say tuberculosis when there is high blood pressure.

The object of this paper is to encourage all to make a diagnosis from symptoms, a diagnosis when the disease is so easily cured.

I had intended to say but little on physical diagnosis, as I felt my paper was too long, but at the suggestion of one of your members, I have added a few pages on that subject, mostly on those things where one is liable to make a mistake.

First, do not hesitate to strip your patient down to the waist. In the woman, if you wish, pin a sheet around just above the nipple, but leave the chest exposed so that you can compare the two sides. I have heard more than one physician excuse himself for not doing this, and allowing false modesty to prevent him from finding perfectly apparent pathology.

Second, have your patient, if able, sit on a chair in front of you, and sit down yourself. You cannot make a good examination

if either your patient or yourself are in an uncomfortable position.

It is necessary to know the normal variations between the right and left chest, but remember that no two chests are exactly alike, any more than are two faces, nor are the variations alike to the same degree. In the ultimate analysis it is the comparison of the findings of the two sides.

As your patient sits before you, you automatically compare the two sides, and notice particularly if when he breathes deeply both sides expand to the same degree. The right usually expands slightly more than the left, but both should start at the same time, otherwise there is a lagging. You may be able to determine this better by placing the hands on the right and left upper chest. Lagging means that some of the muscles are in a state of tension, trying to keep that part of the chest quiet over a diseased lung.

In percussion over the left axillary space, the note may be louder and lower pitched due to the position of the stomach, while on the right side it may be duller and higher pitched due to the liver. You will also find that in some cases the same holds good, from the lower angle of the scapula to the base of the lung.

The note is louder and lower pitched above the second rib on the right side. In comparing the two sides, percuss over the same area, and do not have your finger on one side over a rib and on the other between them. Also if you wish to make a fine comparison, have the patient stop breathing, so that each lung may have the same amount of air in them.

In tuberculosis you do not always find dullness where you think you should, probably on account of the compensatory emphysema.

Dullness means something with less air or no air below your finger, from a congested lobe or lobule to a scar, slightly thickened pleura, or a chest full of fluid. This you must determine, from the degree of dullness and your findings on auscultation.

In auscultation your transmission of sound depends on your stethescope; the firmness with which it is applied to the chest wall; the thickness and kind of tissue, out side of the ribs, as well as to what is within the chest.

In the muscular or the adipose your breath sounds will not be transmitted with the clearness as in the thin muscled or where there is but little fat. In the axillary space you will get the breath sounds the clearest and the most normal for that individual, but remember that as in percussion the ultimate analysis depends in the comparison of the same area over the right and left lung.

Personally I never expect to get much information by listening over the scapula or over the breast in the woman. Above the second rib, the breath sound will be louder and the expiratory murmur prolonged, more so on the right than on the left side. Also the bronchial component is more marked on the right. You will find the same holds good at the apex in the back. If this condition is reversed I am very suspicious of one of the apices.

In some cases I have found a decided bronchial sound at the level of the third rib and the outer part of the chest more marked on the left than the right, with no indication of pathology.

For some reason the breath sounds are clearer and of more volume in the left lower interscapular space and below the scapule on the left than on the right. This, however, does not apply to the majority of cases.

Always have your patient cough and then take a deep breath when you are listening for rales. Seventy per cent of the rales in early tuberculosis are only brought out with a cough. When I am listening for rales I usually start at the level of the fourth rib near the sternum, work over into the axillary space and from there up.

Frequently I hear rales where I thus first place the stethecope. These are not an indication of disease and will usually disappear after a few long breaths. They are due to a tongue of the lung slipping down over the pericardium. Also you will hear cracks or rales near the margin of the sternum on both sides which may be due to the movement of the ribs at their sternal

attachment. This is particularly noticeable just below the first rib.

Some times it is very difficult to determine if the rales you hear at the apex are true rales, or are muscle sounds or what some call atalectic rales. If they are the last they are due to the expanding air cells in a little used apex, and disappear after a few deep breaths. Muscle sounds are more difficult to differentiate. However, if the rales come from the lung you should also hear them, below the clavicle, at the true apex. That is between the two attachments of the sterno mastoid, or at the apex in the back at least in one of these places as well as above the clavicle.

You also nearly always hear fine rales at the base of the lung in front and frequently in the back, on deep breathing. These are due to the separation of the diaphragmatic pleura from the parietal pleura as the lung passes down into the complemental space and are not due to pathology.

In my opinion changes in breath sounds reveals the first pathology to be noted with the stethoscope; a higher pitched inspiration or expiration with frequently a prolongation of the expiratory murmur as compared to the normal side. The pitch is the important element. A weakening of the breath sounds as compared to the normal side may be the first thing noted. Remember, you must compare one side with the other.

With regard to rales: There is no rale pathognomonic of tuberculosis, although the first rales usually heard are crepitant or subcrepitant heard at the apex or in the upper lobe. I have explained how to differentiate them from other sounds.

Do not make a diagnosis of tuberculosis from rales found at the base of the lungs, except in children, unless you are sure there has been a previous tuberculosis in the upper lobe.

CONCLUSIONS

1. You seldom see a patient at the time of his first infection.
2. Tuberculosis ceases to be an infection and becomes a clinical disease only when you have signs and symptoms.
3. Symptoms occur weeks and months before you can discover pathology with your stethescope.
4. Tubercle bacilli in the sputum means a pulmonary tuberculosis.
5. Pulmonary hemorrhage, unless you can discover some other cause, means pulmonary tuberculosis.
6. The diagnostic and prognostic value of temperature cannot be overestimated.
7. The effect of exercise on the temperature and pulse is of great diagnostic and prognostic importance.
8. Blood pressure is an important factor to be considered in making your diagnosis.

TORULA INFECTION OF THE PALATE AND NASO-PHARYNX *

By E. LLOYD JONES, M. D.
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I DO NOT expect to take up much time with the case to be presented, as I hope to have it appear later in a more complete form after the disease has run its course. Four months ago I thought I would be able to present a cured patient, since that time, however, the condition has become active and it is in this state that I present him today.

The pathology is visible at first hand. I will have the patient pass among you. Mr. Shalley has kindly consented to come with me and have you see his throat. I want you to note the loss of tissue in the palate, the healed condition on the right side. Note also the erosion on the left, the anemic swellings bordering this erosion. Far back in the naso-pharynx is a more or less uniform swelling situated just below the fossa of Rosenmiller. Note the slight inflamma-

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tory reaction, the mucoid coating, the yellow kernels or accumulation; note that there is no odor, no slough; there is an absence of scar tissue; there are no glandular enlargements in the neck, practically no pain, and note further that his general health remains fairly good.

Let me review his history and the condition in which I first saw him. He is 35 years of age, and an Armenian by birth. He came to the office in November, 1924, complaining of deafness, tinnitus and difficulty with nasal breathing. Family and personal history are practically negative except for the fact that he had Neisserian infection in 1917, from which he made a complete recovery. His occupation is that of a cobbler.

In December, 1922, he had a severe attack of sore throat. The family physician not being in a position to make a smear and culture gave him 10,000 units of diphtheria anti-toxin. The acute condition of the throat subsided, but for several months following the throat remained in a more or less irritated condition, so that in March of the following year, he had his tonsils removed. The right fossa did not heal properly, remaining painful. He returned to the surgeon, who being somewhat suspicious had made a Wassermann test of blood, this proving negative, a piece of tissue was removed from the right side, which was not examined. The throat proceeded to apparent complete recovery.

Present Illness: Appears to date from exactly one year following, or March, 1924, when accompanied by difficulty in breathing through right side of nose, the right ear became deaf, which was associated with tinnitus. He noticed at that time also that there were small swellings in roof of the mouth, but paid no further attention to them. In August, 1924, the left side of nose stopped up and the left ear became deaf. He was first seen in the office in November, 1924. An examination showed that the deafness was of the conductive type, due to the closure of the eustachian tube orifices. In both nares there was considerable mucus. The septum was deflected to the right, high up.

Below this or on a line with the lower edge of the middle turbinate there was a hard swelling on both sides of the septum, increasing in thickness from above downwards so that inspection beyond the anterior half of the nasal cavity was impossible. In the throat on the right anterior pillar were seen two small nodules about 6 m.m. in diameter, slightly elevated above the surrounding tissue. The mucus membrane covering these nodules was anemic. Enlarged blood vessels were visible running over the surface. A piece of the anterior pillar including one of these nodules was removed for microscopic study. On the oral surface of the soft palate were seen six small nodules, but varying in size from four to six mm. in diameter. The mucosa was anemic just as it appears at present over the borders of the excavations on the left side. The surface was intact, no ulcerations were present. There was practically no pain on pressure. With the mirror in the nasopharynx on each side could be seen a large tumor mass measuring about 2 to 2.5 cm. in length vertically and one-half that size anterio-posteriorly attached to the pharangeal wall with a broad base comremoved is as follows: The section consists The mass that can be seen at present on the left is part of one of them.

General physical examination of chest, abdomen and extremities by Dr. MacGregor was negative. Temperature was normal and an X-ray of the chest was negative for tuberculosis. The Wassermann test of the blood produced a one plus reaction. The report of the frozen section of the tissue removed is as follows: The section consists mainly of a mass of necrotic tissue in which the outlines of pre-existing cells can just be made out. The over-lying epithelium is intact and normal in appearance. The tissue is moderately vascular. In the necrotic mass are many smooth muscle fibers in various stages of degeneration. Owing to the extent of necrosis shown by the tissue a positive diagnosis can not be returned. The impression is gained, however, that we are dealing with an adamantinoma or at least a neoplasm of that general type.

Progress: With these findings a tenta-

tive diagnosis of a tertiary lesion of syphilis was made and treatment at once started with weekly intravenous injections of 0.9 gm. neo-arsphenamime, mercury inunctions daily and increasing doses of potassium iodide. After the second dose of neo-arsphenamime the nodules in the palate became painful and started to break down, first appearing as two small pin point openings in the soft palate in the middle.

November 18th, the report of the paraffin section was received. This read as follows: We are unable to reach a more definite diagnosis than we did from the frozen section, though it may be said that the original impression of an adamantinoma is untenable. By exclusion we are probably dealing with a very low grade of chronic inflammation such as is produced by a foreign body or other mild but constant irritant. There is nothing to suggest a syphilitic or tuberculous etiology.

In the course of the next two weeks the small ulcerations of the palate increased very rapidly in depth, the palate sloughed completely through. The uvula and central half of the soft palate disappeared as having melted. There was no odor connected with this slough. Smears and cultures on ordinary blood agar showed few staphylococci but no organisms of Vincent. A blood Wassermann test made at this time was negative.

During January, 1925, the large ulcerations in the palate appeared to remain constant. There was no tendency to healing and no evidence that the process was advancing. Tissue removed at this time was examined microscopically. The report on February 9th, is as follows: The main body of the tissue is made up of a loose stroma of what is apparently fibrous tissue. Scattered in this stroma are numerous rather large cells or at least the nuclei of these cells as the cytoplasm can not be made out. These nuclei are for the most part round with a few pyriform shapes. They take the stain deeply and are rather regular in size. The surface of the tissue is covered with a pseudo-stratified epithelium part of which ends in tufts of hydremic cells. The basement membrane is distinct and not invaded. Below the epithelium are gland-like spaces, some of which are cut longitudinally others transversely. These spaces are lined with the same epithelium described above. At several points it is hyperplastic. There is necrosis of the submucosa and infiltration with what may be endothelial leucocytes. The gland-like spaces cannot be explained A section from this tissue has been sent to Dr. Ewing of the Cornell Medical School for his opinion as to the neoplastic nature of this lesion. Under date of February 28, Dr. Ewing's main statement is that this is some form of granulomatous tissue which is partly necrotic. He rules out the possibility of it being a neoplasm but can add no further light.

At this time the patient was seen by three nose and throat specialists, and a dermatologist. The opinions were equally divided as to the lesion being carcinoma and lupus. Although the examination of the tissue and some of the characteristics of the disease did not warrant a diagnosis of lupus, the lesion was so considered as far as the therapeutics were concerned. The throat was exposed to the influence of the ultra violet rays every other day, which was followed by some improvement in the anterior portion of the palate where the process had not perforated.

In March, the patient was admitted to the hospital to have the remaining portions of the naso-pharynx cauterized. This was done, and a section of tissue was removed at the time for further microscopic study. Incidentally, there developed bilateral acute suppurative otitis media which required incision of the drumheads. The blood taken at this time was negative for syphilis by the Wassermann technic and by the Kahn precipitation test.

The report of the tissue removed at the time of cauterization is as follows: The overlying pharyngeal mucus membrane is intact. There is no definite evidence of syphilis, tuberculosis or carcinoma. There are peculiar types of cells noted beneath the mucus membrane. Diagnosis: chronic inflammation, granulation tissue, probably tuberculous in origin.

Cells were noted in each specimen. Cultures were made upon lactic acid glucose

agar. After 36 hours pure colonies of yeast cells were found, which were identified as torula. In order to obtain an uncontaminated culture of the tissue the mucus membrane overlying one of the nodules in the palate which had not completely broken down, was cleansed with boric acid solution, an incision was made and with a small curette scrapings were secured and cultured. The cultures and the organisms were identified as torula. Cultures from both ears at this time showed staphylococci and yeast cells which were identified as torula. In the culture of the sputum it was especially noted that the numerous cheesy-like masses in the sputum produced heavy growths of the yeast cells. White rats were inoculated intraperitoneally and killed three months later. Nodules of the kidney produced pure cultures of the organism torula.

The patient was discharged from the hospital April 21st, the ulcerations in the palate showing marked tendency to healing. During the six months following the ulcerations healed completely, both sides appearing as the right appears at present. The ears returned to practically normal. The patient gained in weight and felt well except for the difficulty in speech.

Two months ago the patient complained that the left ear had become deaf. Examination showed the remains of the mass in the left side of the naso-pharynx had increased in size, also that the previously healed area on the left side of the perforation was becoming nodular and ulcerated in the center. The ulceration increased rapidly in all directions. A blood Wassermann was repeated with a negative result. The lesion has been twice cauterized in the last six weeks. Tissue was removed April 25th. The report of the microscopic examination verifies the diagnosis of torula infection and definitely rules out syphilis, tuberculosis and malignancy. There is a tendency to healing at present. For the past two and one-half weeks nothing has been done, so that you can see the pathology not influenced by any recent treatment. The ultimate outcome of this case is doubtful.

I will not go into the description of the organism or a review of the literature at this time. Let me say, however, that the case puzzled me for a long time as to the diagnosis. The credit for the diagnosis belongs to Dr. W. M. Sheppe, of the Ohio Valley General hospital laboratory. As you note the diagnosis was made after we excluded carcinoma, tuberculosis, lupus and syphilis, and then only after noting the persistency of the yeast cells in the microscopic examination of the sputum. Cultures on acid media produced pure cultures of the organisms. Torula is closely related to the organism which produces blastomycosis, but they differ in their cultural characteristics. Torula buds but never forms hypha nor ferment sugars.

MEDICAL MOTION PICTURES

Among the adjuncts to methods of medical education, the use of the motion picture has proved to be somewhat of a disappointment. Greeted originally with salvos of acclaim by surgeons, obstetricians and laboratory diagnosticians, only the former—and those too in a limited group—continue to see great possibilities for help in the newest of the "arts." Perhaps a part of the difficulty may be ascribed to the attempt to launch medical, obstetric and surgical films on the medical public without adequate study of the problems concerned and to the desire to exploit them financially rather than scientifically. When the Wertheim obstetric films were shown in this country a few years ago they were widely criticized for their departures from accepted American technic and because they made difficult obstetric procedures appear far too easy. Instead of withdrawing them from exhibition as would be done with other outworn or outdated educational material, the films have apparently passed from one proprietorship to another and are now being exhibited wherever the promoters can drum up a sufficient medical or near medical audience—accompanied by curious friends in not a few instances. The burden of proof is still on any producer to show that such films as are available, revealing surgical or obstetric technic, have real educational value and are not as potent for harm as for good.

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THE MIDDLE MEATUS IN PARANASAL SINUS DISEASE *

By J. B. McMURRAY, M. D.
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INTO THE MIDDLE MEATUS, the ostia of all the anterior paranasal sinuses open. Through these openings and into the middle meatus, any secretion from the sinuses flows into the nose, overflowing across the inferior turbinate into the inferior meatus if profuse or the anatomical structure of the nose favors overflowing. If the amount of secretion is not profuse and the lateral wall of the nose is normal, the secretion flows backward into the epipharynx.

The middle meatus is not only a drainage canal but also a ventilating chamber for the anterior group of sinuses and the avenue through which they are infected from the nose.

The normal accessory nasal sinus contains air. The process of ventilating is not thoroughly understood. The middle meatus with the narrow hiatus semilunaris leading into the infundibulum which is somewhat expanded anteriorly under the attachment of the anterior end of the middle turbinate is an ideal ventilating chamber. During inspiration as the air rushes into the nose the pressure in the infundibulum is reduced and during expiration the current of air is more or less forced into the infundibulum from behind. No attempt, so far as I know, has been made to prove that there is a variation in the air pressure of the frontal sinuses during respiration. In the maxillary sinuses the variation of pressure during inspiration and expiration can be demonstrated. That there must be a continuous change of air in the nasal sinus is evidenced by the fact that rhinologists have recognized vacuum headaches due to absorption of oxygen in the contained air of the frontal sinus when the fronto-nasal duct is occluded. This variation in pressure certainly is not an accidental occurrence. The difference in temperature of the sinus air and the atmospheric air as it passes into the nose during inspiration might have something to do with the ventilation of the maxillary sinuses but could not have any effect on the frontals What effect, if any, swallowing has on the air content of the sinuses has not been determined.

Structural abnormalities of the nose must have a marked influence on the normal process of ventilation. One nasal chamber is usually narrower than the other, varying from very slight narrowness to almost complete closure. The middle meatus may be also entirely closed by pressure from a deviated septum, a very large middle turbinate with a misplaced ethmoidal cell in its anterior end or the bulla ethmoidalis may be very large. In the narrow nostril ventilation is not normal. Congestion of the mucosa due either to infection or changes in humidity of the atmosphere causes marked obstruction with a feeling of fullness or actual pain. This pain may be the result of pressure as suggested by Skillern or it may be the result of improper ventilation. However accomplished, ventilation of the sinuses is an important physiological process which can be proved in the maxillary sinus.

As the atmospheric pressure varies in the sinus there must be air currents passing in and out through the ostia. Infection from the nasal mucosa can enter the sinuses with these air currents. High positive pressure can be produced in the antrum, in some cases, by blowing the nose, and probably increased in the frontals.

In the nose with a very narrow nostril, the sinuses on the opposite side are just as often infected as those on the narrow side. In fact, in my experience, the antrum on the open side is more often infected during acute inflammatory processes than the

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antrum on the closed side. If the sinuses on the narrow side become infected, which is not infrequent, the middle meatus being narrow, drainage is very imperfect and recovery very retarded. Chronic sinus disease is favored by obstruction of the nares.

The frontal sinuses in acute infections of the nose are not so frequently involved as the ethmoids or antra. The length of the fronto-nasal duct may afford the frontal sinus some protection. The ethmoids however are very susceptible. The mucosa in the middle meatus very early in acute infections becomes congested which reduces the size of the ostia and may thus afford some protection to the sinuses. The antrum, however, presents a different problem. Anatomists tell us that 10 per cent of all antra have accessory openings, one or more. These accessory openings are located posterior to the normal ostia and may be much larger. The susceptibility of the antrum to infection is not wholly dependent upon its anatomical position with its ostium in the superior anterior angle. Drainage from the antrum is not overflow when the sinus is full but is a continuous process, the mechanism of which at present is little known. It is impossible to put anything into an air-filled cavity without displacing some of the air content. The antrum with a single opening is air-locked. The antrum with an accessory opening, however, is not thus protected. Infected material may enter the antrum through one opening and air can escape through the other. This may take place when the pressure in the antrum is either negative or positive.

Ventilation and drainage are the prime factors in maintaining a normal nose, and accessory sinuses, as well as in recovery from pathological conditions. Those of you who do opthalmology know that the lachrymal system is more than a simple drainage system. It would seem, in epiphora for instance, that if the lachrymal duct is open drainage should be normal. This we know is not the case. Some other factors enter into the drainage of tears from the eye into the nose. Just so do I believe that the middle meatus is so constructed that it favors drainage and ventilation of the sinuses.

The ciliated epithelium, when the sinus is normal, is an aid to drainage but in pathological conditions these cilia are destroyed. We know that drainage still continues whether the head is held in a favorable or unfavorable position. The integrity of the middle meatus should therefore be respected as a potent factor in ventilation and drainage. In pathological conditions either of the nose itself or the sinuses, the surgical procedures should be directed toward restoring normal ventilation and drainage with as little destruction of tissue as possible. If the middle meatus is obstructed by polyps, the removal of the middle turbinate is bad surgery as most polyps originate in the antrum. In fact, some authorities state that polyps in the middle meatus are always of antral origin. Curing of the antral disease will thus eradicate the polyps. Very often one is tempted to remove the middle turbinate. I think the middle turbinate should be preserved in every case if it is possible to preserve it. If it is large a resection of a central wedge can be done preserving the mucosa next to the septum and lateral wall. We thus leave the middle meatus undisturbed. If the nostril is narrow and the septum is deviated, straighten the septum to restore normal respiration as drainage and ventilation of the sinuses is dependent upon normal inspiration and expiration through the nostrils. If it is necessary on account of disease of the frontals or anterior ethmoidal cells to remove the middle turbinate, it should be done, as surgery is treatment intelligently applied with as little destruction of the normal tissue and as little alteration in the normal function as possible.

Through the middle meatus it is possible to treat the antrum by washing through the normal or an accessory ostium. This in my judgment, is safer than puncture through the inferior meatal wall. The percentage of cases in which this procedure cannot be carried out will gradually decrease as one becomes more accustomed to the technique.

In conclusion, I would like to urge that the integrity of the middle meatus be respected, for while we cannot thoroughly understand the way it acts in ventilation and drainage

of the anterior paranasal sinuses, I am convinced that it is an important factor and that unnecessary or careless surgery deprives the patient of an important function when its structure is unnecessarily altered.

DISCUSSION

DR. KING: In what percentage of these antrum infections are you able to wash the middle meatus?

DR. MCMURRAY: About 98 per cent, where there is room enough to get in.

DR. MARTIN: I do not agree with him that all polyps come from the antrum. Is Dr. McMurray satisfied with the simple removal or does he proceed to any radical work on the antrum?

DR. MCMURRAY: Certainly I do not stop with the removal of the polyps from the nose; that is not the end of it. I heard a paper read some time ago in which everything was cured from the abdomen up by the removal of the middle turbinate. If you have a polyp closing the antrum, cure your antrum disease and do it in a surgical way; don't destroy your nose. Whatever surgical procedure you use, use it as intelligently as you can. When I say I treat 98 per cent of antrum infections by washing the middle meatus, I am sure I am not overshooting the mark. When I advocated this procedure in Pittsburgh four years ago I was criticized and told it was a dangerous procedure, but I believe it is practical. In the five years I have used it, I haven't had any trouble.

RADIOGRAPHY IN PARANASAL SINUSITIS*

By H. V. LUSHER, M. D.
Huntington, W. Va.

IN THE X-RAY diagnosis of paranasal sinus disease, we are attempting by means of roentgenography to delineate the sinuses upon an X-ray film and to visualize pathology varying in character and degree approaching the microscopic in proportions. Conclusions as to pathology must be based upon a definite idea of a constant and demonstrable normal. The radiogram which is merely a graphic record of the varying densities through which the ray passes before striking the film, is necessarily influenced by several different factors present, aside from that of pathology.

The location of the sinuses in the bony wall of the head and face makes an unobstructed view of them impossible. Skulls vary enormously in their size and configuration, and in the thickness and density of their constituent parts. The sinuses themselves vary greatly in size, are prone to be asymmetrical and to have an unequal air content. As the roentgenologist must base his deductions largely upon whether or not a given sinus is clear, cloudy or opaque, the pneumatization of the sinuses becomes of the utmost importance. Large, symmetrical and well ventilated sinuses make a clear and easily diagnosed picture, while the small asymmetrical and illy ventilated sinus may be very difficult to differentiate from the pathologic.

Of the paranasal sinuses present at birth, the ethymoids are most constant, and begin their formation earliest in foetal life and at birth show the greatest degree of development of any of the pneumatic spaces of the head. The antrums also are present at birth with but few exceptions. The sphenoidal sinus, as a distinct bony cell, is very rarely present at birth, but development begins in early infancy and continues very rapidly up to the tenth or twelfth year, at which time it has reached almost adult proportions. The frontal sinuses are never present during the first year of infancy. Development begins in the second year and is not complete until puberty. The frontals are formed by a migration of anterior ethmoid cells into the diploe of the frontal bone. The size, shape and even the presence of these sinuses depend upon the conditions present in the ethmoids.

* Read before the Cabell County Medical Society, March 11, 1926.

Disease of the ethmoid cells in infancy and early childhood may either prevent or materially alter their formation. We may have then a complete absence of one or both sinuses or a persistent infantile type. This occurs in about eight per cent of all cases.

Undeveloped sinuses are more prone to infection, and tend more to chronicity than do normal ones, and normal development is not resumed until the infection is eradicated

Rapid or precocious development of the paranasal sinuses in young children is not uncommon; therefore, the radiogram may show a marked variation in the size of the sinuses in children of approximately the same age. Paranasal sinus disease in infancy and childhood is, therefore, far from infrequent, and the pathologic changes are not different from those in adult life. The clinical symptoms and subjective signs, however, seem less pronounced, but the remote or systemic effects are more numerous, more frequent and more serious than in the adult.

The value of an X-ray study of these cases lies in first determining whether or not a given sinus is present; second, its probable stage of development, and third, whether from a pathological standpoint, it has clinical significance. However, a negative radiogram should not rule out a paranasal sinus disease with finality.

Of the pathologic conditions that may be present in the sinuses, those of infectious or inflammatory origin are by far the most common. In point of incidence, the anterior ethmoids are most frequently affected, due primarily to their anatomic situation at the gateway of the respiratory tract. Here they are subjected to constant irritation from inspired dust and bacteria and to frequent changes of temperature.

The bony walls and septa of the ethmoids are quite fragile, covered only by a delicate layer of periosteum, and this in turn by a very thin mucosa. The repeated periosteal inflammations which follow each cold or coryza may eventually lead to bone cell proliferation, and a consequent hyperplasia. Therefore, a hyperplastic ethmoiditis is far more common than is the suppurative.

The antrums on the other hand show a greater preponderance of suppurative or empyemic conditions. This is due first to their position; as the lowermost of the sinuses they are subjected to frequent infections from above; secondly, drainage is very inadequate. The ostia being situated at almost the highest point on the inner wall and well above the floor of the antrum, makes complete evacuation impossible, and the acute catarrhal sinusitis with its retained secretions readily becomes purulent. Third, comes the dental infections from extension of apical abscesses and injury to the antral wall during extractions.

Radiographically, the acute catarrhal sinus with its swollen and congested mucus membrane is recognized by the slight, but uniform haziness of the involved cavity. On the other hand, the chronic or hyperplastic type in which there is hypertrophy of the mucosa, connective tissue proliferation in the submucous layer, together with periosteal thickening gives a well marked cloudiness, while the outline of the sinus may show the pathologic thickening of its walls. The empyemic sinus shows a uniform opacity and is the most easily recognized of the sinus diseases. It must, however, be differentiated from the polypoid sinus, in which the pathologic changes may take the form of an extensive edema of the mucosa with hypertrophy of lymphoid elements and mucous cells, transition of celiated to squamous cell epithelium and small round cell infiltration of the submucosa and periosteum together with osteoporotic changes in the septa and bony wall, resulting in a thinning out of these structures. On the radiogram, we see a thin walled sinus with round or oval masses of about the same density as pus. A cavity filled with small polypi gives a shadow of the same density as an empyema but without its uniformity.

The frontal sinuses, as previously mentioned, are the most inconstant and the most variable in size and contour of any of the paranasal cavities. In a large percentage of skulls the two sinuses are asymmetrical, the one large and well formed, the other smaller or even infantile in type. There may be a marked deviation of the septum laterally, thus forming sinuses of unequal

size. The antero-posterior diameter or depth also varies considerably with different skulls.

These variations together with the anatomic position of the sinuses between the external and internal plates of the frontal bone make a clear and uniform radiogram difficult to secure. The catarrhal diseases of the sinuses which are manifested upon the radiogram as a slight or moderate cloudiness may be obliterated in the frontals from overshadowing by the bony plates of the skull. The condition of the infundibulum must then determine the diagnosis. Its relative length and position, surrounded as it is by ethmoid cells make its delineation upon the film quite distinct. An occluded infundibulum even in the absence of definite cloudiness in the sinuses usually justifies a diagnosis of catarrhal or vacuum sinusitis.

The frontals are also occasionally affected by suppurative processes both acute and chronic. The pus filled cavity casts a uniform opaque shadow in the radiogram and is quite readily recognized. Necrosis of the bony wall which sometimes complicates suppuration within the sinus is easily recognized since it spreads rapidly beyond the confines of the cavity and gives the irregular "worm eaten" appearance to necrotic bone. Owing to the unusually rich blood supply to the frontals the systemic effect of suppuration and necrosis may be severe and grave complications such an meningitis, sinus thrombosis and brain abscess may supervene.

The sphenoidal sinus occupies the body of the sphenoid bone. It is a bilateral cavity of varying size and shape. The septum is osseous and very thin. It is frequently incomplete and may be absent entirely. It may be situated laterally thus forming cavities of unequal size. Of the pathologic changes, suppuration is by far the most common, and is practically always associated with posterior ethmoiditis. The causative agent, of course, is bacterial. But its mode of invasion is obscure and its constant association with ethmoiditis undetermined. Radiographically, it is the most inaccessible of the sinuses, and to establish a diagnosis with any degree of certainty usually requires raying of the skull in three diameters: namely, posterior, anterior, lateral and vertex, to upper lip. The posterior-anterior view is usually inconclusive because the ethmoid shadow, being projected directly in front of the sphenoid serves to partially or completely obscure the latter, especially when associated with ethmoiditis and its consequent increased density.

The lateral view gives a very definite outline of the sinus and can ordinarily be relied upon to show a clear or a cloudy cavity. But again in unilateral suppuration the clouding may be indeterminate because the shadow of the normal, air-filled space directly overlies that of the diseased one. It will then require the vertex position with its opportunity for comparison of relative densities to clinch the diagnosis.

EXAMINATION OF CHILDREN WITH PULMONARY LESIONS

Patients suffering from pulmonary tuberculosis may, upon examination, show that fairly extensive lesions may become so removed as to leave little or no evidence of their former existence. The authors examined 66 children in order to determine whether the lesions in infants and children may undergo such marked healing as they do in adults. They found 26 to be improved and 9 healed with complete disappearance or calcification and fibrosis of the lesions; 6 showed advance in their condition; 5 had died. This study is of importance in showing the great number of mild cases which undoubtedly run their course undiagnosed, the majority of the cases improving and the true nature of the disease remaining unsuspected.—Dorothy Hutcheson and J. A. Myers, *The Journal-Lancet*, 47:15 (January 1) 1927.

Pays For His Sins

A negro minister discovered two of his parishoners playing cards on a Sunday—and for money.

"Rastus," said the minister, "don't you know it's wrong to play cards on de Sabbath?"

"Yeh, parson," answered Rastus, ruefully, "but, believe me, ahs payin' for mah sings."

TRACHOMA: A PUBLIC HEALTH PROBLEM *

By W. C. THOMAS, M. D.
Huntington, W. Va.

TRACHOMA is a very wide spread disease. Every civilized nation has localities in which the disease is very distressing in endemic form. The most heavily infected areas of the world are Arabia, Palestine and Egypt, where 90 per cent of the people are said to have the disease. In Eastern Europe, the percentage is also high, but in European nations where the disease has received the attention of the health authorities, the percentage is very much better. The Czech-Prague Opthalmological Clinic reports recently that only 1 per cent of patients applying for treatment were trachomatous. In this country, the region of the Allegheny, Cumberland and Big Smokey Mountains and the Western foothills have for a long time been considered our most heavily infected sections; but there is no exact information on the matter. About 6 per cent of the inhabitants of our Indian reservations have or have had the disease. Just a few years ago, a law in Missouri pensioning the blind brought to light the fact that, as a cause of blindness in that state, trachoma leads the list. There is no doubt that several of our states are more heavily infected than Missouri and a thorough survey would produce surprising figures.

Nearly every county in the region of the mountains mentioned and the Upper and Middle Ohio and Tennessee river valleys has numbers of families tantalized by trachoma and numbers of inhabitants with vision seriously impaired by it.

In this region, nearly every case seen is the chronic endemic type. Although we have meager reports of epidemics occurring on our Indian reservations in recent years, no noteworthy epidemic has occurred, since Napoleon had 75 per cent of his army infected on his expedition in Egypt. A large percentage of the civil population was infected following the return of his soldiers to their homes.

The acute epidemic type is believed by most authors to be an admixture of trachoma and acute infection by the Koch-Weeks or Morax-Axenfeld bacillus, influenza bacillus or gonococcus. Greff, however seems to have proven by inoculation, that there is an acute trachoma, which may develop in a few days. The acute exacerbations of the chronic type are sometimes spoken of as acute trachoma, but a careful history will usually bring out previous symptoms of chronic conjunctival irritation, such as photophobia, lacrimation, occasional sticking together of the lids in the morning or other exacerbations of more or less severity. These attacks occur at intervals of from one to four times in twelve months and in the vast majority of cases, incapacitate the sufferer for a period of weeks and reduce the visual acuity each time. During these attacks, we find ulceration of the cornea, iritis or acute infection such as, Koch-Weeks or the influenza bacillus engrafted upon the chronic trachoma or what is more common, a combination of all three. Permanent damage is done to the cornea by the ulcers and to the lens and vitreous by exudates left by the iritis. The severe attacks produce a degree of photophobia, lacrimation, and pain that only a combination of iritis, corneal disease, and conjunctival irritation can produce. In many cases, one such attack will reduce the vision below the point of usefulness, but what is just as important from an economic standpoint is the long period of disability experienced by these patients.

The report of the committee on trachoma of the American Medical Association in 1921 as to the etiology of trachoma is interesting. It says: "The true cause or specific causative agent of trachoma has not yet been positively determined. The dis-

* Read before the fifty-ninth annual session of the West Virginia State Medical Association at Morgantown, W. Va., May 27, 1926.

ease is conveyed to a healthy eye from a diseased eye by means of morbid secretions. The secretions therefore, contain the cause; but whether this is an organism or merely an organic substance, we do not know with certainty." The committee follows this with the statement that the disease is not highly contagious, but others report contracting the disease from receiving a droplet in the eye, while treating an infected eye.

Poor hygenic conditions seem to rank first as an agency to favor the spread of the disease. In many homes where very little energy is expended for cleanliness, every member of the family is found to be infected, while in the homes of the more particular parents, some are found to be infected and others free from the disease. Infants are rarely found to be infected and it is unusual to see a child under two years of age with visible signs of the disease. The family wash basin and towel often seen on the back stoop of our rural homes surely carry the contagion to many eyes. Acute conjunctival infections such as influenza, Koch-Weeks, or Morax-Axenfeld bacillus are believed to break down the power of the conjunctiva to resist the trachoma virus. This fact should help us remember that acute catarrhal conjunctivitis is deserving of considerable attention in communities where trachoma is prevalent.

A disease so chronic and so insidious as trachoma is truly a problem for the public health officer. However, I believe it to be a preventable disease and also believe that every case is curable, if patient and surgeon will co-operate and continue proper treatment to that end. Education of the sufferers, as to the means of prevention of the spread of the menace as well as treatment is of paramount importance in eradication.

It would greatly help the educational scheme to put trachoma on our list of reportable communicable diseases. This would at least, help the practitioner keep the matter of community service in mind, when trachoma is seen or mentioned, even if he does not care to treat eye diseases. To exclude it from our public schools would further impress all parties concerned and with the serious nature of the condition, as well as eliminate danger of spreading infections in schools. Serious epidemics seem to be a matter of history but we have no assurance that this is a fact. Every trachomatous patient should be advised that he has a preventable and curable disease and that it is his moral obligation to his family and neighbors to co-operate in the matter of eradication.

It seems to me that physicians generally are inclined to give little thought to prevention of trachoma—possibly, because it does not endanger life. Of course, all agree that life is more precious than vision, but a disease that damages the vision of many citizens should receive the same attention as preventable diseases with a death rate.

During routine examination of school children, the eyelids should always be everted and cases of trachoma excluded until proper treatment has made them safe, and suspicious cases kept under observation, until they are known to be safe. Other members of the household from which the positive or suspicious cases come should be advised to have eye examinations. Cases of trachoma in the family with the suspicious cases would make them appear more suspicious.

The early symptoms are photophobia, lacrimation and sensation of a foreign body. This is followed by a redness and appearance of granules in the cul-de-sac and tarsal conjunctiva, and later by noticeable thickening of lids, pannus and narrowing of palpebral fissures.

The diagnosis is made on the appearance of the conjunctiva of the lids and cul-de-sacs. Two clinical types of chronic trachoma have been described—the papular and the follicular.

In the papular type, the everted lid presents a rather smooth appearance, red thickened conjunctiva usually with bands of scar tissue. The fiery red hypertrophied conjunctival papillae and scar tissue can be seen plainly, after wiping away the mucous coating with a cotton swab. This variety is not easily mistaken, although subacute catarrhal conjunctivitis, especially that due to the Morax-Axenfeld bacillus may present a very similar appearance. However, no

scar tissue is present in catarrhal conjunctivitis and a few days' energetic treatment will improve it to the point of clearing the diagnosis. In the follicular type, the hypertrophied adenoid layer of the conjunctiva (trachoma bodies) is the characteristic feature. The everted lid is roughly granular all over or, in the early stage, granules are confined to the cul-de-sac. Over the tarsus the granules are flattened grayish or pinkish white in color and deeply imbedded. In cul-de-sacs, granules are more hemispherical. In this type, also, wiping away the mucous covering will frequently make visable tiny bands of scar tissue, except in the very early stages. All authors agree that in recent mild cases of this type can not be distinguished with certainty from folliculosis of conjunctiva. In folliculosis the granules are principally in the conjunctiva of the lower lid and are smaller than trachoma granules and are covered by epithelium which shows very little, if any, signs of inflammation. Folliculosis is essentially a disease of childhood and youth and occurs in all walks of life, causes little or no discomfort to the patient and disappears spontaneously, leaving no scars. The public health man should treat suspicious cases as trachoma and keep them under observation, until he is convinced that they are benign. All cases are entitled to an early diagnosis and treatment as is possible and it is my practice to do a light grattage or expression operation on cases of folliculosis that do not improve rapidly or an antiseptic collyrium after refractive error is corrected. This is the procedure followed by John E. Weeks, James W. May and DeSchweinitz. Scarring following this treatment is very slight and in fact, in most cases cannot be seen at all, if the case be one of simple folliculosis. McMullen brought out what I consider a very important point to distinguish trachoma—"The blood vessels of the conjunctiva are obscure at various points between the lid margin and the cul-de-sac, while in folliculosis, the vessels can be followed throughout the entire conjunctiva."

Palpebral vernal catarrh and Perinaud's conjunctivitis are also mistaken for trachoma. In palpebral vernal catarrh, the mild symptoms of conjunctival irritation are worse in Spring and Summer and are not in keeping with the very rough appearance of the lining of the lids. The granulations are large and cover the entire tarsal conjunctiva and are flattened. The conjunctiva has a peculiar milky hue. Scrapings from the lining of the lid will show eosinophiles. In Perinaud's conjunctivitis, there are granulations very similar to trachoma but fever and other constitutional disturbances, enlargement of submaxillary and other lymph glands and the fact that only one eye is usually affected, lead to the correct diagnosis.

There is a non-inflammatory trachoma which causes very little or no discomfort to the patient and which recovers spontaneously, leaving no trace except scar in the cul-de-sac and tarsal conjunctiva. Some of these patients give a history of "trouble with the eyes," while others insist the eyes have never given a bit of trouble. I have often seen parents who had partially or completely recovered from this kind of trachoma bring in children suffering all the tortures of the most destructive cases.

Various treatments are recommended for the various stages of the disease and a description of them would fill volumes. My opinion is that the surgical removal of the diseased tissue is to be recommended for all stages, if the scrubbing or massaging of the conjunctiva with cotton swab or gauze over the finger is called a surgical procedure. For the early stage, Woodruff advises, 10 per cent solution silver nitrate applied with a swab to the everted lid, the cornea being protected and excess neutralized with salt solution. I have found this excellent treatment in cases where the granulations are tough and difficult to remove with gauze sponge or cotton swab. I have used it at intervals of about a week, but find that the scrubbing operation is to be advised in most cases, especially on account of the violent pain caused by this strength silver for 24 hours or longer, and the risk of burning the cornea with it. Two per cent solution of silver nitrate has been used by many, but I have noticed very little benefit from its use. It clears up mixed infection when present

but has very little effect on trachoma granulations. This causes a false sense of security which, together with the pain caused by the application of silver, encourages the patient to discontinue treatment. The massage or scrubbing may be done with powdered boric acid sprinkled on the lid or with a solution of bichloride of mercury 1-500 or stronger; but it is my opinion that these drugs are no better than the plain gauze over the finger. The superficial layers are scrubbed off at two to ten day intervals, as the case demands, until bleeding takes place.

In the further advanced cases the brossage or grattage is almost invariably the first thing to do. The only contraindications to this operation are corneal ulcers so deep that rupture is believed imminent or concurrent gonorrheal infection. The operation is simply the removal of the granules from the everted lids by one of several methods. None of these methods will be described in detail, the point to be remembered is that the task is to remove the diseased tissue. I prefer the dull scalpel or curette followed by scrubbing with gauze. Most important after care is prevention of symblepharon. Any granulations left by this operation are removed by a second grattage or by methods advised for handling early stages. Children and youths can frequently be cured by one such operation.

In the cicatricial stage, the first and last word is the removal of the tarsal plates—operation popularized by Kuhn in the nineties. This operation is followed by very great benefit in almost every case. It not only gets rid of the disease, which is deep in the cartilage but is the easiest and best way to cure the entropion which about 75 per cent of the cases have. This operation sometimes leaves a small amount of granulation just inside the lid margin; but the patients are so greatly improved that it is very difficult to persuade them to return for observation.

SUMMARY

1. Trachoma is much more prevalent and more serious than is generally believed. It damages the vision of numbers of citizens.

2. Epidemics have not occurred for a number of years; but in an age of convenient transportation and shifting population, we should bear in mind the possibility of an epidemic.

3. It should receive the same attention of health officers and the medical profession generally, as the other serious communicable disease.

4. Education of affected individuals and families and treatment carried to a cure should be insisted upon in all cases.

DISCUSSION

DR. C. H. KEESOR, Wheeling:

First I want to congratulate Dr. Thomas upon his excellent presentation of a timely subject. To my mind, there is no part of the human economy that we can get along less well without than sight. Certainly sight is one of our greatest assets. The cure of trachoma is an educational matter, for it is a preventable disease and a curable disease. Many school children are found to have trachoma, the condition being discovered through the agency of the schools. (You will pardon a personal reference or two I may make.) A few weeks ago I was doing a week's special work in Cleveland and found there one entire school given entirely to children suffering from trachoma. It had gone to that stage, so you can see how quickly it spreads and the damage it does. This was in an Italian section.

Another case was that of a girl fourteen years of age, in school. I found she had trachoma. I might say this—I do not pretend to be a specialist on the eyes and ears, but when I see a case suspicious of trachoma I send it to a competent man, not a man who fits and sells glasses, but one whom I think is capable of treating trachoma. Sometimes he confirms my diagnosis; sometimes he does not. I am just as glad when he does one as the other. This girl went to a physician but soon stopped treatment. I sent a nurse after her and had her taken to another specialist. Soon she stopped treatment again, and we found she had gone to work in a store. I got in touch with the manager of the store and told him she was infectious, and she was discharged. She

began treatment again but soon stopped, and we found she was working in a factory. I told the manager about it, and she was discharged. I told the girl that she would not be allowed to go to work and stay at work until she had had her eyes cured. She then persisted in the treatment until the condition was cleared up.

Trachoma should be made a reportable disease and should be reported within 24 hours after it is discovered.

Now, in sending cases to specialists, I think a mistake we make sometimes is in treating those cases or trying to diagnose them ourselves. It may be that we can treat trachoma as well as the specialists, but I believe it is better to send every case of trachoma to a man doing eye work.

DR. THAMES: Trachoma is on the list of reportable diseases.

DR. THOMAS, closing the discussion:

I am glad to learn that trachoma is reportable by law. It was not on the last list I had from the Public Health Council. It certainly should be reported.

As Dr. Keesor said, the schools are the best place to pick up the cases.

ABSTRACTS

Blood Pressure in Tuberculosis

For years the opinion has been current among clinicians generally that a low blood pressure is the rule in pulmonary tuberculosis, some going so far as to make a low pressure a necessary diagnostic point. Dr. Wildman's paper in our current issue stresses this view. Barnett P. Stivelman contributes an article on this subject to the January *American Journal of the Medical Sciences* in which he presents the findings in a careful study of 701 tuberculous patients who were apparently free from cardiorenal and metabolic conditions. One of the striking findings was that 10 per cent of the series had essential hypertension. We quote his

Summary

1. "The arterial tension in patients with minimal tuberculous disease is within normal limits for individuals of the same sex and age. Blood pressure determinations are therefore of little or no diagnostic value in incipient tuberculosis.

2. "The blood pressure declines with the advancement of the tuberculous process. Active cases almost invariably show a lower arterial tension than comparable quiescent patients.

3. "Patients with fibroid disease apparently show higher pressure values than those with other forms of tuberculosis. This is particularly noticeable in women over 40 and is probably secondary to the influence of the menopause.

4. "The incidence of hemoptysis is greater in those with arterial tension below the average for their respective group than in those at or above the average. It appears, however, that the arterial tension and hemoptysis are not etiologically related. They are coincidental symptoms of advancing disease. Hemoptysis in the tuberculous with essential hypertension was seen less frequently than in cases with normal or subnormal blood pressure.

5. "The few patients under observation in whom pulmonary tuberculosis and syphilis coexisted had a higher blood pressure and a more favorable immediate prognosis than patients free from leutic infection.

6. "The development of an effusion and the induction of pneumothorax had no appreciable and permanent effect in altering the blood pressure in either brachial artery so long as the intrathoracic equilibrium was not unduly disturbed as a result of mediastinal displacement. The mediastinal dislocation was prevented by early and judicious aspiration in the case of effusions and careful adjustment of the intrapleural pressure in pneumothorax cases with labile mediastinal structures.

7. "An increase or a decline in the blood pressure of patients under treatment does not offer a reliable indication as to the course of the disease. However, it appears that the initial blood pressure determinations are of some prognostic value. Those with higher arterial tension than the average for the age, sex and extent of involvement do better than those whose blood pressure is below the average for the group."

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¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

REMITTANCES

¶ Should be made by check, draft, money order, express order or registered letter to Sterrett O. Neale, 303 Professional Building, Charleston, W. Va.

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EDITORIAL

Payment of Dues

As this is being written fifteen days prior to the "deadline" date of April 1 when all delinquent members' names will be removed from the *Journal* mailing list, only about one-half of the names of members have been reported by secretaries and treasurers of component societies. No reports have been received from eight of the component societies, three of them being among the largest in the state. These likely will come rolling in towards the last of the month but all members should exercise every precaution to prevent becoming delinquent on April 1.

As stated in the last issue of the *Journal*, names of the delinquent members must be removed from the mailing list until such time as dues are received. Postal regulations require this. The executive secretary's office has no alternative. The ruling must be complied with.

In addition, delinquent members will be without medical defense protection until such time as dues are received and defense will be operative only from the date dues are paid.

Each year there are a few physicians who, through oversight or negligence, fail to meet their obligations. Dues actually are payable on January 1 but as a matter of courtesy, members are carried for 90 days to give them an opportunity to recuperate from the holiday expenses. However, at the expiration of the three months both the constitution and by-laws of the state association and the regulations of the postoffice department require that the names of all members whose dues have not been received, be stricken from the rolls. The names can not be reinstated until remittances have been received.

Needless to say, failure to pay dues promptly costs the state association a considerable amount each year in postage and extra office work. The whole mailing list of some 1,100 members must be checked carefully, the names of delinquents must be removed from the card index roster and this work consumes from a day to a day and a half of time that otherwise could be used to advantage. In addition, it has been the practice in the past to send back copies of the *Journal* to those who pay their dues after the "deadline" date. If there are 200 names on the delinquent list on April 1, and all receive from two to three copies of the *Journal* sent parcel post, each package means postage of from 8 to 10 cents, depending upon the number of *Journals* mailed.

These facts are given to urge all members to see that their dues promptly are reported. Medical organization activities in West Virginia now are entering the sixtieth consecutive year of endeavor. In addition, this is "legislature" year and the routine work of the executive secretary's office is correspondingly heavier than in "off" years. Therefore, the cooperation of every physician is needed.

The association only fell short of 1,100 members by about 40 in 1926. Association activities were materially broadened. The *Journal* kept a close record of scientific achievements and medical economics. Every effort was, and will continue to be, extended in the interests of the membership.

We are sincerely hoping, therefore, that by the time this *Journal* reaches the membership that the secretary will have reported 100 per cent paid up list.

White Sulphur

What the American College of Physicians and the American College of Surgeons are to the doctors of the United States, the West Virginia State Medical association should be to the physicians of West Virginia. As members of the former meet in annual session at the different selected cities in the United States for the announcement and promulgation of new ideas, discussion of special cases, renew acquaintances, form

new friendships and get away from the daily grind, so will your attendance at the sixtieth annual meeting in White Sulphur Springs in June add to your pleasure and information.

The program will consist of addresses by men of national prominence among our own members and physicians from other states.

White Sulphur in June is one of the most beautiful spots in West Virginia and the entire east and is easily accessible by different railroad and permanent highways. Curfew will not ring until 3:30 a. m.

Also, your wife is entitled to a vacation and visit to this historic resort of Presidents of our nation. Bring her along this time and we are sure she will not miss many meetings in the future.

This is also to be the ex-Presidents' gathering and we will be disappointed if a single one of these "old birds" fail to flop their wings around the banquet table.—C.A.R.

A Controversy

Our attention has been called to a controversy aired in the public press (Moundsville, W. Va., *Echo,* January 21, 1927) between two prominent members of the medical profession. The bone of contention is the administration of toxin-antitoxin for the prevention of diphtheria.

We take cognizance of this affair because both medical papers, as published in the newspaper, were first read in a regular session of the Marshall County Medical society and thereby became a part and parcel of the records of the state association and its component societies.

It is unfortunate that this matter could not have been settled without this wide publication. With all due respects to the ability of both gentlemen, we call attention to the one who "must be shown," that throughout the ages, advancements and discoveries in medicine have had opposition and in many cases, persecution and prosecution. Some of us are old enough to recall the dreadful ravages of diphtheria before the days of antitoxin and how eagerly and earnestly we resorted to its use, notwithstanding the many sudden deaths and severe anaphylactic reactions attributed to its use before its proper preparation and administration were thoroughly understood. Antitoxin has been used more and more widely and the deleterious effects have been less and less marked until now any physician who would refuse to use it would be guilty of a crime.

We place little or no credence in the truth of assertions appearing in the columns of a sensational publication which are quoted by one of the authors, preferring to pin our faith to scientific research and statistics and to government authorities engaged in prophylaxis and preventive medicine.

As we had faith in antitoxin, we are convinced that toxin-antitoxin will prove to be even a greater blessing to humanity.

—THE PUBLICATION COMMITTEE.

Diphtheria Immunization

Elsewhere in the *Journal* in the general news section will be found a report of the United States Public Health service in which is stressed the precautions taken to raise safeguards in the manufacture of toxin-antitoxin for the immunization of children against diphtheria. This report was published in full December 3 in the *United States Daily,* a nonpartisan publication that daily records, without comment, affairs of moment in Washington.

On December 18, the division of communicable diseases of the New York State Department of Health, reported 65 deaths from diphtheria which occurred in July, August, September and October and an analysis of the deaths revealed that 61 of the 65 patients never had been given toxin-antitoxin. In two of the remaining four cases, no statement was made as to the history of immunization while in the other two, the preventive treatment was given too late. The report further stated:

"Such facts as these serve to emphasize the well-known value of toxin-antitoxin in the prevention of diphtheria and should offer further stimulus to the state-wide efforts that are being made to secure the gen-

eral use of this remarkable discovery among all children over six months of age."

Again on March 3, the United States Public Health Service made public a statistical statement showing a steady decline in the number of cases of diphtheria reported by 39 states for the years 1923 to 1926, inclusive.

Reports from 39 states and the District of Columbia showed that a total of 122,927 cases of diphtheria were reported in 1923, as compared with only 75,091 cases in 1926. In the intervening years, the cases reported were: 1924, 102,616; 1925, 81,830. This "remarkably steady decrease," it was stated, shows that the number of cases reported in 1926 was 38.91 per cent less than the number in 1923.

The falling off in the figures each year from those of the preceding year was 16.52 per cent in 1924, 20.26 per cent in 1925, and 8.23 per cent in 1926, according to the compilation.

The New England states showed the greatest improvement the figures for 1926 being 59.49 per cent below that for 1923. The East South Central states were the only group which showed an increase for the four years, and this increase amounted to only 1.94 per cent. "In general," it was said, "the improvement was greatest in eastern and northern sections and least in the southern groups of states."

From the foregoing it would seem that the efficacy of toxin-antitoxin is unquestioned and we sincerely hope that the time is not far distant when diphtheria will be wiped out entirely in West Virginia.—C.A.R.

Measles Immunization

That the blood or serum of a patient recently convalescing from measles has some protective value when injected intramuscularly into an individual recently exposed is a proven fact. An optimum situation for immunization occurs when the citrated whole blood or serum is obtainable from a donor only three or four days afebrile, and when it can be given to the exposed individual in from one to three days following exposure. When it is possible to do this little chance remains for the development of measles from that particular exposure. In the very few cases so developing they are so mild and the symptoms so atypical that they are frequently not recognized as evidences of attenuated measles. Complications are proportionately exceedingly rare. When the blood or serum is obtained from a donor who has been a long time afebrile, its potency seems to have decreased progressively although having some value for some months. It is probable that the shorter the interval of time used in transfering the blood from donor to recipient, the less altered is its potency. When exposure has been more than four days previous, the chances of complete temporary immunization are somewhat decreased. More than six days after exposure it is rare for a complete even temporary immunization to occur. In individuals exposed more than four days there is a progressively decreasing percentage of complete immunizations, and a progressively increasing percentage of mild attenuated cases of measles. From the sixth day after exposure one can only hope for a modification of the severity of the malady and fortunately this occurs frequently enough to be worth while. Citrated whole blood seems to have all the efficacy of the serum, is more easily prepared, simple to give and can usually be done without changing from the syringe with which it was drawn. From 5 to 10 c.c. is all that is required. There are certain theoretical considerations which favor the use of the whole blood citrated over the serum. The usual precautions regarding freedom from infection in the donor and donors blood must be observed.

The immunization which is produced in this manner is probably mainly passive and therefore lasts only a short time. There is no denying however that in certain cases a permanent active immunity is produced. Degwitz, a German worker, who has contributed so much towards the understanding of measles prophylaxis feels that there is a certain amount of passive immunity developed in this manner and he terms it "indirect active immunity".

Tunnicliff and Hoyne claim to have pro-

duced a successful serum by injecting goats with a green producing diplococcus said by the former to be the cause of measles. Caronia, in Italy, claims to have developed a successful vaccine, using a small anaerobic diplococcus he has isolated from the nasal secretions, bone marrow and spinal fluid of measles patients. The attenuated or inactivated cultures of this organism are said to produce immunity. In larger quantities they produce typical symptoms of measles. Just recently we have been informed of a claim of one of the commercial biological houses of reputation, that one of their workers has isolated an organism that satisfies Koch's postulates and that they have developed a successful serum based on rational scientific work and observation.

Of these we have much yet to learn. Of the convalescent human blood or serum we have a safe, pretty certain although not always easily available agent and when available (as it usually is in epidemics) it is simply and safely used and when used in the proper way at the proper time it is very effective. GEO. M. LYON, M. D.,

REPORTS FROM COMPONENT SOCIETIES

Eastern Panhandle

Doctor Hunter McGuire of Winchester, Va., was the principal speaker at a meeting of the Eastern Panhandle Medical society in the Hotel Shenandoah, Martinsburg, on March 9. His paper was on the subject, "Incipient Cataract."

Doctor C. C. Johnson of Harpers Ferry, has been elected president of the society for 1927; Doctor Ernest H. Bitner is vice president, and Doctor A. B. Eagle of Martinsburg is secretary. Delegates to the sixtieth annual meeting are Doctors Clifford Sperow and Eagle.

Summers

Doctor J. F. Bigony has been elected president of the Summers County Medical society for 1927 and Doctor R. G. Broaddus has been re-elected secretary-treasurer. Both reside in Hinton.

Academy of Medicine (Parkersburg)

The Academy of Medicine of Paarkersburg, at a meeting March 3, virtually supported *in toto* the recommendations of the state association's committee on public policy and legislation as contained in Legislative Bulletins Numbers 1 and 2. Furthermore, the society went on record as favoring abandonment of the state miners' hospitals at Welch, McKendree and Fairmont as state institutions, believing they should be converted into some other class of institutions.

Doctor William F. Reinhoff, Jr., of Baltimore, was the principal speaker at this meeting, lecturing on "Hyperthyroidism and Relation to Benign Tumors and Thyriod Gland." It was one of the best essays ever delivered before the society.

The next meeting will be on April 7 when the principal papers will constitute a symposium on Diseases of the Heart.

Doctors H. D. Price and C. W. Ailor, 66 and 69 years old, respectively, both of Parkersburg, have been elected honorary members of the academy.

Fayette

The Fayette County Medical society held its monthly meeting at Montgomery, W. Va., February 8, 1927, at 8 p. m. The meeting was called to order by the president, Dr. H. A. Walkup. The program for the evening was a symposium on Obstetrics, as follows:

"Are Toxemias of Pregnancy Essentially Biological?" by Dr. Thos. A. Lamb, Montgomery, W. Va.

"Reduction of Morbidity and Mortality in Childbirth," by Dr. G. G. Hodges, Kilsythe, W. Va.

"Surgical Abdomen in the Female—Some Diagnostic Hints," by Dr. W. A. Simpson of the Oak Hill Hospital, Oak Hill, W. Va.

G. A. SMITH, M. D., *Sec'y.*

OLDEST LIVING HEAD OF STATE ASSOCIATION ELECTED HONARARY MEMBER

Doctor James Whann McSherry, 94 years old, of Martinsburg, oldest living member of the West Virginia State Medical association and oldest ex-president of the association, has been elected an honorary member—but not at his own request. In fact, his dues for 1927 came along as they have each year for the past half century but in view of the action previously taken by the council, Dr. McSherry's remittance is to be refunded. It is believed that he is one of the first members of the association which now is entering its sixtieth year. The association was formed in 1867 in Fairmont. The information is not available as to whether he was a charter member but at least he became a member when the association met in Martinsburg in 1871.

Dr. James Whann McSherry

Dr. McSherry's talent as a physician and surgeon was recognized in 1878 when he was elected president of the state association at the annual meeting in Weston—just 49 years ago this May. The same year he was elected president of the Berkeley County Board of Health. In both these important positions he served with distinction and ability, receiving the undivided encomiums of his colleagues.

There probably is no man in Martinsburg who is more highly esteemed by all classes of citizens than is Dr. McSherry who first of all is the physician, then the president of a bank, twice mayor, officer in the Confederate army and all-around enterprising and progressive citizen whose education, intelligence and opportunities always have been used for the advancement of his community. He was born in Martinsburg December 7, 1833 and except for the trying days of the war between the states, he has continued to reside near his birthplace. He was educated in in Martinsburg academy, which, in the days of his youth, was famed as an institution of learning. Graduating, he went to St. Marys college, Baltimore and after attending these preparatory schools, he entered the University of Maryland Medical school from which he graduated in 1855. He is probably Maryland's oldest alumnus.

Upon leaving college, Dr. McSherry took up his practice in Peytona, Boone County, then Virginia, where he worked until Virginia seceded from the Union. Immediately he offered his services to Governor Henry A. Wise and was commissioned a surgeon in the Confederate army. Upon organization of the Virginia State troops, he was commissioned Captain of Company B, 36th Virginia regiment. After engaging in a number of important skirmishes he was taken prisoner November 19, 1863, and removed to Malden, 6 miles east of Charleston. He later was moved to Wheeling, then Camp Chase, Ohio, and then to Ft. Delaware.

During the war Captain McSherry participated in battles at Fort Donaldson, Scary Creek, below Charleston; Summersville, Carnafax, Cross Lanes, (where General Tyler was defeated); Sewell Mountain, Cotton Hill, Fayetteville, Dogwood Gap, Chattanooga and Knoxville.

When peace was declared, Dr. McSherry

returned to Martinsburg and again actively engaged in the practice of his profession and his practice was the largest in the Eastern panhandle region. He was married June 3, 1876, to Miss Virginia Faulkner, youngest daughter of the Hon. C. J. Faulkner and the sister of former Senator C. J. Faulkner and Judge E. Boyd Faulkner.

Dr. McSherry always has taken the greatest interest in politics and civic affairs and in every movement for the progress of his city. He still walks to his office daily—he is president of the Citizens bank, one of the Eastern panhandle's strong financial institutions—and the years sit lightly upon his shoulders. He may be found each day at his desk, reading, receiving numerous visitors and, in some instances, being consulted by old friends and patients who believe that "Doctor Jim," as he affectionately is known, can cure their mental and physical ills as no one else.

His friends throughout the profession sincerely hope he can attend the sixtieth annual meeting of the state association to be conducted in White Sulphur Springs next June. It is to be known as the ex-presidents' meeting and it would be fitting to bestow additional honors upon this stalwart son of organized medicine. If he can be enticed away from his beloved Martinsburg and if he feels "up" to the journey to the White, over which ground he marched so often as a soldier, he will attend.

INCREASE IN STATE TREATED PATIENTS

Each of the state-owned institutions treating the sick, afflicted and infirm showed an increase during the month of January as compared with January, 1926, according to a report just made public by Mr. Roy Reger, secretary of the state board of control. There were 6,222 persons in state institutions January 31 but of this number 4,218 were in correctional institutions.

In the three state hospitals for mental diseases and insane, an increase of 157 patients is shown. In addition, there are now 205 colored insane in the new institution for people of this race.

The state tuberculosis sanatorium had 316 patients, an increase of 6, while the colored tuberculosis sanatorium had 60, an increase of 20. In the three so-called Miners' hospitals, Welch, McKendree and Fairmont, a net loss of 2 is shown, Welch having a decrease of 19 and Fairmont, 9; while the number in McKendree showed an increase of 26.

BAFFLING ILLNESS CLAIMS MRS. EDW. L. ARMBRECHT

Mrs. Edward L. Armbrecht of Wheeling, wife of Doctor Armbrecht, third vice president of the state association, died March 4. She became seriously ill on Tuesday and progressively worse until death, despite everything possible that medical science could bring to bear in the case.

The malady, a peculiar throat affection, has not been diagnosed as yet, and it had many features which later may be of interest to the profession since no one in attendance had ever seen a similar throat clinically, nor had they encountered the organism.

Mrs. Armbrecht was a singularly youthful woman who had every appearance of living many years to come and it is particularly sad to think an illness so baffling should come to the lot of a physician who has done so large a share to make others well and happy.

Mrs. Armbrecht was the mother of five boys who are well known as a particular credit to any mother, and as a mother of the finest instincts and ideals, she always will be remembered. The sons are Doctor Edward Armbrecht, Jr., Dr. Robert Armbrecht, Carl, George and Harold.

Mrs. Armbrecht was a woman of many private philanthropies and she was a mother who had the particular faculty of having open house for all the boys of the neighborhood. The funeral was one of the largest in recent years and the floral tributes were so varied and many that they made one sure, after all, that the public appreciates the work of wives of conscientious practitioners of medicine.

INFLUENZA DECLINES

Reports from the *United States Public Health Service* for the week ending March 19, and compiled from 30 states, show that there has been a decline of almost 10,000 cases of influenza as compared with the same week in March, 1926. The greatest decline came in Oklahoma. That state had 2,511 cases for the week ended March 20, 1926, as compared with 139 cases for the week ended March 19, 1927.

PLANS NEW BUILDING

The executive committee of the board of visitors of the Medical College of Virginia, Richmond, has authorized President W. T. Sanger and the college authorities to map out a twenty-year building program preliminary to the construction of three new buildings projected for the immediate future. These will include a woman's dormitory, a new clinic for the walking sick, and laboratory for chemistry, bacteriology and pathology.

MARQUETTE IS PLANNING FOR HOSPITAL CONGRESS

Marquette University College of Hospital Administration has announced plans for the holding of the Hospital Clinical Congress of North America the week of June 20 to 24 inclusive, in Milwaukee.

The Rev. C. B. Moulinier, regent, stated that Marquette University has been working for some time preparing for the congressional exposition. The plan is to set up in the auditorium in Milwaukee complete working exhibits of modern hospital equipment and demonstrate their use under actual conditions. It will be the first attempt to institute a "working" clinic, demonstrating the most modern advances in hospitalization.

There will be four distinct departments: Hospitalization, Public Health, Safety and Research. The Congress will be vitally interesting to all persons interested in hospitalization; hospital superintendents, staffs, trustees, nurse superintendents, engineers, architects, dieticians, those interested in safety, first aid industrial hospitalization; public health leaders, welfare workers, both public and private.

TRI-STATE MEDICAL SOCIETY TO MEET IN HUNTINGTON

The fifth meeting of the Tri-State Medical society will be held in Huntington, April 28 at Hotel Prichard, at 2 o'clock. An elaborate program has been prepared, which includes prominent speakers. The program follows:

"The Diagnosis of Abdominal Conditions, and Surgical Pathology in the Upper Abdomen," Dr. Chas. Gordon Heyd, New York City. Discussion: Dr. Mont Reid, Cincinnati, Ohio.

"Diagnosis and Treatment of Brain Conditions," Dr. Walter E. Dandy, Baltimore, Md. Discussion: Dr. Charles E. Locke, Cleveland, Ohio.

Business session. Dinner, 7:00 p. m.

Evening session, 8:30 o'clock. "The Treatment of Some of the Common Digestive Disorders," Dr. Thomas R. Brown, Baltimore, Md. Discussion: Dr. John D. Dunham, Columbus, Ohio.

TOXIN-ANTITOXIN HAS GREAT PREVENTIVE VALUE

Safeguards applied in the manufacture and distribution of diphtheria toxin-antitoxin mixture are described in a report by the Public Health Service. Diphtheria toxin-antitoxin, the report points out, has in the last few years come into such general use in the prevention of diphtheria "as to occupy a place of importance in the preventitive immunization against disease probably second only to smallpox vaccine."

Thousands of children are immunized every year, says the report, "and the effect of the excellent prophylactic measure is being reflected in the lower diphtheria rate which is evident in localities where much work has been done along this line."

Toxin-antitoxin mixture, the report says, is prepared only in establishments holding license issued by the Secretary of the Treasury, under recommendation of the Public Health Service, which makes a thorough investigation. The product is prepared, it

is explained, from diphtheria toxin and diphtheria antitoxin, "mixed in such proportions that the former, a poison derived from the diphtheria bacillus, is almost, but not quite, neutralized by the antitoxin which is obtained from the blood of a highly immunized horse."

After aging for a year, the serum is subjected to other tests. "One drop of a good antitoxin," it is pointed out, "is sufficient to prepare 2,000 doses of toxin-antitoxin mixture."

The text of the report follows:

"Diphtheria toxin-antitoxin mixture has in the last few years come into such general use in the prevention of diphtheria as to occupy a place of importance in the preventive immunization against disease probably second only to smallpox vaccine.

"Every year thousands of children are immunized, and the effect of this excellent prophylactic measure is being reflected in the lowered diphtheria rate which is evident in localities where much work has been done along this line. This result in the control of a dreaded disease of early childhood is all the more gratifying in that immunization is accomplished with practically no local or general reactions in the inoculated children.

"Very young children unquestionably take toxin-antitoxin mixture better even than those of school age, the ideal age for producing immunity being around the end of the first year of life. By this time the child will have lost the immunity acquired from the mother and will soon begin to come more generally into contact with other children, with the increase in danger of acquiring diphtheria.

"Heaviest mortality rates from diphtheria are encountered in children below the school age, and it is probably safe to say that the immunization of one child of this group will equal the immunization of five school children in effect on the diphtheria death rate. Some means of reaching this very important group of children is very much needed.

"Toxin-antitoxin mixture is prepared only in establishments holding license issued by the Secretary of the Treasury, upon recommendation of the Public Health Service. The service, through the hygienic laboratory, insures that the establishment is properly equipped with both physical apparatus and properly trained personnel to carry out the careful technique of manufacture and testing before recommending a license. This information is obtained always by means of a careful personal inspection by an officer of the Public Health Service.

"The product is prepared, as the name indicates, from diphtheria toxin and diphtheria antitoxin, mixed in such proportions that the former, a poison derived from the diphtheria bacillus, is almost but not quite, neutralized by the antitoxin, which is obtained from the blood of a highly immunized horse. Very careful, accurate testing is always done on each lot.

"The toxin is usually prepared in the establishment and allowed to age for at least one year. By this time the first rapid deterioration will have taken place.

"The strength is next accurately determined by inoculation in guinea pigs weighing 250 grams (8-9 ounces). One drop of a good toxin is sufficient to prepare three doses, or one course of immunizing treatments of toxin-antitoxin mixture.

"The antitoxin is a specially selected, highly concentrated product, as it is derived from the serum of the horse and it is desired to keep the dose as low as possible. One drop of a good antitoxin is sufficient to prepare 2,000 doses of toxin-antitoxin mixture.

"The antitoxin is also aged to make it stable, and then very carefully tested to determine the exact strength expressed in units per cubic centimeter. Guinea pigs are also used for this test.

"These two products are next diluted with sterile phenolized salt solution and mixed in such proportions that five human doses will kill a 250-gram guinea pig in from 6 to 20 days, while one human dose will cause a local reaction in the guinea pig, but will only cause paralysis in from 15 to 30 days. It is thus seen that the amount which shows no acute symptoms in the very susceptible guinea pig weighing one-half pound, could

not possibly harm a child weighing from 20 to 80 pounds.

"This exact degree of toxicity is difficult to obtain, and can only be secured by careful measurements of ingredients, the strengths of which are accurately known. Frequent adjustments and re-tests are usually required.

"After the mixture is completed and adjustments of toxicity are made, the entire lot is filtered to sterilize, and final toxicity and sterility tests are applied by the manufacturer. If these tests are satisfactory and the manufacturer considers the mixture suitable for the market, samples of each lot are sent to the Hygienic Laboratory, where sterility and guinea-pig tests are also made. No lot is released for distribution until tests at the Hygienic Laboratory are satisfactorily completed.

"Owing to the tendency of diphtheria toxin to deteriorate, and particularly when diluted, this product is only allowed to remain on the market for six months and precautions should be taken to keep in a cold place, but not allowed to freeze. Freezing causes a slight turbidity to appear and renders the product inactive.

"With the present type of mixture which is in universal use, the original toxin content is one-thirtieth that of the older mixtures, the product is water clear and with the great care in manufacture, with check testing by different laboratories, the public is assured a safe and effective product which may be employed with confidence."

ANNOUNCEMENT

Mr. Sterrett O. Neale has severed his connections with the *Journal* as secretary-manager to accept other employment. The Council has employed Mr. Joe W. Savage as his successor to whom all future communications should be addressed.

We regret very much to lose Mr. Neale, whose work as secretary has done much to improve the *West Virginia Medical Journal,* and we wish him every success in his new field of endeavor.

Mr. Savage is a young man well equipped for this kind of work. being a graduate of the West Virginia University, and having three years' experience in the newspaper business. With your hearty cooperation we think it will only be a short time until affairs of the office will go along in the usual manner.

LOW INFANT DEATH RATE

According to statistics released March 14, Chicago has the lowest baby mortality death rate of any of the five largest cities in 1926. For each 1,000 births the death rate was: Chicago, 67; New York, 68; Los Angeles, 68; Philadelphia, 77; Detroit, 86. For nearly two years, Chicago has been concentrating upon saving baby lives and the work has cost large sums of money. The Sheppard-Towner act is *not* operative in Chicago, or Illinois.

COMMUNICATION

TISSUE DIAGNOSIS IN THE OPERATING ROOM

NOTE:—It will be well worth your time to read Dr. Bloodgood's address on the subject of "Biopsy in Diagnosis of Malignancy" published in the January, 1927, issue of the Southern Medical Journal and take advantage of the demonstrations to be held at Johns Hopkins.—EDITOR.

Microscopic examination of stained frozen sections has been possible for more than a quarter of a century. The staining of unfixed frozen sections with polychrome methylene blue and other stains is a well-established procedure. In many operating rooms in university and other large and small surgical clinics, provisions for these immediate diagnostic studies have not only been available, but have been in practical use for years. While, unfortunately, on the other side, this diagnostic part of the operating room is conspicuous by its absence in many clinics.

Before 1915 it was rarely necessary for a surgeon well trained in gross pathology to need a frozen section to help him in diagnosis at the operating table. Since 1915, and especially since 1922, the public has become so enlightened that malignant dis-

ease formally easily recognized either clinically or in the gross, now appears in our operating rooms devoid of its easily recognized clinical and gross appearance and can only be properly discovered by an immediate frozen section. The majority of operating rooms are not equipped or prepared for this new diagnostic test.

The first essential part for this diagnosis is the technician—one to cut and stain the frozen section, or to make and stain the smear. The second is a pathologist trained to interpret it. It is possible for the surgeon to be all three in himself, and some young surgeons are so equipped. In others it is a dual combination—surgeon and pathologist in one, and the technician. More frequently it is three—operator, technician and pathologist. It makes little difference whether it is one, two or three individuals, providing each has the equipment and training for this most difficult diagnostic test.

In the address as chairman of the surgical section of the Southern Medical Association, I discussed biopsy, and this paper has been published in the *Southern Medical Journal* for January, 1927 (Vol. xx, page 18). A reprint of this paper will be sent to anyone on request. The chief object of this letter is to come in contact with surgeons and pathologists who are sufficiently interested in this problem to discuss it either by correspondence, or by attending a meeting in the surgical pathological laboratory of the Johns Hopkins Hospital, either the Monday before, or the Friday after the meeting of the American Medical Association in Washington.

Schools for technicians may have to be established in different sections of the country, and the surgical pathological laboratories of the medical schools and the larger surgical clinics should offer courses in this tissue diagnosis, so that surgeons may learn to become their own pathologists, or pathologists learn the particular needs of the surgeon in tissue diagnosis in the operating room.

It is quite true that when the majority of the public are fully enlightened, the surgeon will see lesions of the skin and oral cavity and the majority of subcutaneous tumors when they are so small that that their complete excision is not only indicated, but possible without any mutilation. The chief danger here will be a surgical mistake —the incomplete removal of an apparently innocent tumor. There is no necessity here for biopsy. If a proper local excision is done, no matter what the microscope reveals, that local operation should be sufficient. But when lesions of the skin, oral cavity and soft parts are extensive and their complete radical removal mutilating, then there must be biopsy to establish the exact pathology.

In tumors of the breast and disease of bone, for years, the diagnosis could be made clinically, or from the gross appearances at exploration. But now, an increasing number of cases, the breast tumor must be explored, and the gross pathology of this earlier stage is not sufficiently differentiated to allow a positive diagnosis. Immediate frozen sections are essential to indicate when the complete operation should be done. The same is true of the earlier stages of lesions of bone. The X-rays no longer make a positive differentiation between many of the benign and malignant diseases, for example, sclerosing osteomyelitis and sclerosing osteosarcoma.

We must not only specialize in tissue diagnosis, but we must organize this department so it will function properly in as many operating rooms as possible in this country.

Then there is a final and most difficult question to consider. I doubt if it can be settled. What shall be done in those operating rooms in which there is no technician to make the sections and no one trained to interpret the microscopic picture? How can a piece be excised or a tumor removed, for example, from the breast, and this tissue sent to some laboratory for diagnosis without incurring the risk of the delay to the patient? I have discussed this point in my paper on biopsy.

JOSEPH COLT BLOODGOOD,
Johns Hopkins Hospital.

To The Editor:

Those who attended the 1926 meeting of the American Medical Association and

heard the demonstration of heart beats that could be distinctly studied—not only heard, but so defined that any pathological sounds were also distinctly audible—have probably learned with interest that a long series of discs for reproducing all physiological and pathological heart sounds by the phonograph have been prepared and are already available, and have been used in clinical teaching.

Since the first beginnings of the cinema in Paris, surgeons—of which the first was perhaps Doyen—have used the film for demonstrating surgical diagnoses and operations. And recently numerous films have been available in this country for studying operations of all sorts; as well as the combination of the cinema and X-ray to show the fractured bones, make their diagnosis and demonstrate every move of the reduction and fixation of such fractures as well as luxations.

Now comes the *Medical Talking Cinema* of which is the demonstration on October 18th last to the French Academy of Sciences by Louis Lumiere (one of the brothers who invented Kinematic Photography). We quote from the cabled account of that demonstration as published in the *New York Times* of October 19, 1926: "It was a film on diseases of the heart, the lecture and demonstration being given by a well known European specialist, Dr. Lutembacher. Members of the academy expressed the belief that the talking film will be a wonderful adjunct to the study of medicine, for in the picture more than six months' study was compressed into the production which lasted but half an hour.

"The most amazing feature of the picture was the examination of several patients and the exact reproduction of heart beats so that every member in the hall could distinctly hear each beat as it reached Professor Lutembacher's ear through his stethoscope. Injections of heart medicines were then given and an improvement in the heart action was at once apparent. Dr. Lutembacher's words synchronized perfectly with his every gesture and action."

It is already possible to apply these methods to all teaching of the exact sciences as well as the clinics and diagnostic methods and operations and by use of these methods every need of teaching even the most advanced students is met more completely than would be possible for any individual teacher to supply.

This solves the problem for complete and advanced medical teaching in medical colleges of limited hospital facilities, and at once invalidates any objection to the complete and advanced teaching of medicine at our own university.

There is no reason that we should not use to its utmost these new facilities; let them be available for our university courses and also for the teaching of all of our practitioners as they assemble for their local county, city and state meetings.—W.S.M.

DEATHS

Patrick Henry Swann

Doctor Swann, 69 years old, of Huntington, honorary member of the state association, died unexpectedly March 7 in Cleremont, Fla., where he had gone to spend the winter. He was stricken with paralysis Saturday, March 5. Funeral services were conducted in Huntington.

Doctor Swann was prominent in state medical association activities, having been a member for almost thirty consecutive years. He was one of the oldest practicing physicians in Cabell county.

He graduated from the University School of Medicine, Louisville, in 1888, and was licensed to practice in West Virginia the same year, locating near Barboursville. In 1905 he moved to Huntington where he practiced continuously. Doctor Swann is survived by Mrs. Swann, a brother, Walter E. Swann, of Cabell county, and a son, Doctor W. C. Swann of Huntington. For years Doctor Swann was an active member of the Johnson Memorial Methodist church. He also was a Knight Templar and a Shriner.

AESCULAPIUS IN MANHATTAN

(A Review)

The medical profession of West Virginia is hereby invited to read an article *"Aesculapius in Manhattan"* appearing in the American *Mercury* for March and written by one Henry F. Pringle, who is on the staff of the *New York World.*

A number of writers in the medical profession have gone on record warning the members, in the last few months, to get their house in order; that there were a number of things that should be thought of, for our general welfare outside of the purely scientific articles which we are continually producing in almost super-abundance and these should be considered at once. For one reason or another the medical man who attempts to bring in these matters at the various meetings or writes about them in journals is looked upon as a man of the second class and the suspicion arises he does it because he is not capable of writing scientific papers. As a matter of fact we are in a plague of scientific endeavor, 50 per cent of which comes to naught. Creeping up from behind us, little by little, however is a band of writers who have a wide audience and who get a hold of some isolated facts about flagrant violations of our standards, and they are becoming bolder and bolder every day in the presentation of them among the laity.

It is ridiculous and absurd to say "Let them go ahead, we don't care." Neither you, nor me, nor anyone else can stand up and wave aside an article like this and say, "Well, what about it?" You may have mingled feelings about George Jean Nathan and George Bernard Shaw and H. L. Mencken but it will avail you but little. The fact that there are so many easy going citizens like you and us, with no outspoken and original observations, is just what makes them conspicuous. The *American Mercury* is 50 cents a copy and was issued as an experiment, but go and try to buy one 20 days after publication! Furthermore, you will find the same kind of articles in the current editions of *Harpers, Atlantic Monthly, Forum* and similar high class publications. You say they usually distort a single incident, or ballyhoo a few isolated flagrancies, or relate an "old wives tale." We believe in many instances you will be right but that matters little after they have sold their wares to what in the examples of the above named periodicals is the finest and most intelligent class of readers in the United States. The trouble is just this and in speaking out about it, we are quite well aware we will bring down some censure on our heads,—we are assuming we are all right, pretty nearly 100 per cent, when we know we are not. In other words we write, and discourse, and preach about our lofty ideals, treatment of the poor, code of ethics, attitude towards fee splitting, honor among ourselves, as if it were part of our education and guaranteed by the diplomas on our walls. To be frank we assume that anyone who is a doctor necessarily has all these virtues. It won't do. It will not go across and all our insistence will not make it go any more than the Volstead law stopped drinking.

The Rotarians were all up in the air over "Babbit." Now, doubtless there are many Rotarians like "Babbit." To take a man like Babbit and let him join the Rotary Club could not possibly wash the Babbit out of him. It is assumed it does. The general facts of the ages are against it. It is conceivable a luncheon club could remove the "Babbit" out of some but not, by any stretch of the imagination, out of all of them. Nor does being a medical practitioner take all that is sordid, grasping, mercenary, and dishonest out of a man. If it did then "medicine" would be by all odds the ideal way to save one's soul. The reclamation of bad boys or girls would be reduced to next to nothing by merely making medical students out of them.

It is on the other hand quite a flattering attitude to have so many laymen assume that it does. Mr. Pringle with all his "worldly" experience has been able to write an article in America's leading high class gadfly publication (and no doubt received pay for it, too) by merely finding out that

some doctors descend to the practices that would not excite any interest at all, if they were exposed on any of the other callings. For instance if some Wall Street brokers divided commissions three or six ways on the funds for investment of a trusting widow, or that the lawyers in a recent settlement of one of America's leading family estates, could not arrive at just what they were going to charge, so great was the pecuniary opportunity. But it was enough and the aggregate among this small bunch of lawyers we will wager equalled all the excess medical fees collected by all the over charging doctors in the city of New York for six months if not longer.

You are not considered much in New York unless you do overcharge and if Mr. Pringle will go a little further he will find as he intimates that the doctors were about the last to discover that they ought to charge more. They have had pre-war fees until only recently, and as far as we can learn, and we have a good many facilities for learning, they were the only crowd of men who did not profiteer during the war and furthermore—this is very important too—they are the only body of men who in the war saved life rather than contrived means to take it.

New Yorkers pay as high as $100.00 for a seat at an opening night at a theatre. They have cover charges of $25.00 as a common expenditure at a night club to hear some indifferent tenor singing about his mammy down in Alabama. Nothing is considered worth while down there unless you do pay highly for it. That is why most Americans feel it would not hurt a great deal if New York was cut off from the remainder of the country. The *"American Mercury"* itself is charging all the traffic will bear at fifty cents a number. But no—it is not right for doctors to do it. It would be all right for the *New York World* to raise the advertising rates 100 per cent, but not any medical journal. It would be all right to give some Italian cabaret owner $50.00 for a cover charge to cut through some dense atmosphere, find a seat, eat two dollars worth of food, drink something or other, who knows what?—and then get a pain in the stomach, have to be carted off to a hospital (which has to be there ready to serve, whether you have any money left or not) and then be operated upon with a man taking a responsibility of your life and the total is not eight times of what your cabaret bill likely was. The cabaret bill was for two hours. The total charges—hospital, nurses, doctors and everything else is given at $734.00 and represents two weeks. During this time you had a hotel room and hotel service. Try staying at any New York hotel for two weeks and see what it will cost you.

This same service can be given in Wheeling today for less than $400.00. Is done oftentimes for $250.00 with the patient having a nurse for only a few days. Is done oftentimes by the same surgeon doing the other pay cases for nothing. How often does Mr. Pringle work for nothing? How often does George Jean Nathan work for nothing? How many subscribers who are poor but intelligent and need mental gadflying will the *American Mercury* send free copies to, month after month? You do not need to answer because we already know the answer. We know that what Mr. Pringle states has happened, is happening, will happen. Too much is expected of the medical profession and that is because the overwhelming percentage of them are as reasonably straight as human nature can be. They it is who have provided a code of ethics which has been in operation for centuries, and which is now being followed by everybody including the newspaper profession. They it is who are the only people who have instituted prophylaxis—which is a scheme which operates against their own business. You can not laugh that off, it makes no difference how bright you are. That stands out against every other diatribe any intellectual can use. It has been estimated it costs $20,000 to turn out a medical student. Yet he is no sooner out of school, even in New York city, than he starts using means to prevent what, if it happened, would bring him money. There are crooks in the medical profession. Dishonesty, preying on the credulous here and there, fee splitting (common as dirt in every other line of en-

deavor), high prices in isolated spots, abound within its ranks. We are afraid always will.

But to write an article like Mr. Pringle's and give the idea that such conduct is the common usage is, we believe, very unfair, just as to say unusually difficult operations should be charged for the same as simple ones is unfair and holds good in nothing else. The lesson for all of us, is to be up and doing, stop assuming we are without fault generally, quit telling how ethical we are unless we show not to each other but to the laymen that we really are, and then on every occasion literally combat these special articles by special writers who are as vulnerable a lot of individuals as are either you or me, and equally distant from the motto "Love thy neighbor as thy self."

AN OMISSION

Inadvertently, the printers left the addresses of the *Victor X-ray Company's* branch offices off its full page advertisement headed "Physical Therapy Apparatus Designed to Medical Needs," which appeared in the March issue of the *Journal*. This is to be regretted since the X-ray company is a staunch supporter of the *Journal* and is entitled to the fullest consideration. Branch offices of the company are located in Columbus, Ohio, at 76 South Fourth street, and in Pittsburgh at 620 Fulton building. Any communication addressed to either of these branch offices mill bring an immediate response.

SOME MATTERS OF MORE OR LESS IMPORTANCE TO THE PROFESSION IN WEST VIRGINIA *

By HARRY M. HALL, M. D.
Wheeling, W. Va.

OF PAPERS AND PAPERS there is no end! Why come in therefore with the impudent inference that there is the dubious situation of something still important? Important, that has not been said! Of course there isn't. Couldn't be. It would look as if the author unable to write on a scientific subject and receiving his instructions to prepare a paper had obeyed them in the only way he could. It has been said, you know, that this is the real reason papers such as this are written. Have it as you will, you must admit that back of all of our endeavors there is a certain sense of unrest. This does not come from any feeling that we have failed to do our duty in the matter of scientific progress. In many respects we have done too much in this way. We have gone too far and too rapidly ahead of those we treat so that in a measure we have left them somewhat out of breath and trying with difficulty to keep up to us. We had them showing us their tongues and taking their temperatures and writing them a prescription and all of a sudden we spend an hour or maybe a day or even a week looking over them with our basal metabolism, blood pressure, X-ray and what not! The change was embarrassingly sudden. What were we before? What are we now? To make it more complex we told them with charming assurance just what they had when we did so little, and now that we do so much we seem to be more vague than ever. This metamorphosis you clearly understand. But do they? No, they do not. As the profession so easily fell into this stride it did not pause to explain itself. It almost never does and the forgetfulness has cost it not a little. This writer has often noticed how gracefully the public receives any foundation shaking discovery in other walks of life but views askance the new discoveries of our calling. To be sure the other discoveries do not touch on life and death and this perhaps explains it all.

In any event this writer affirms we need not offer any apologies on what we have done not only to cure disease but make life extend to longer years and happier ones at that.

* Read before the Ohio County Medical Society at its opening session, October, 1926. (Revised.)

That we have failed so far in "cancer" but makes the other achievements stand out the more and clearer.

It is about ourselves that this discourse would treat. We are careless, heedless, timid thinkers where ourselves are up. What has come over us that some way or other it is almost bordering on the indecent to view us other than scientific partisans? Still must the doctor hasten hurriedly from his golf game betimes that the other lesser lights be reminded that he cannot altogether center his mind on such a thing as knocking about a little ball. If he makes up his mind to be natural he must betake himself to some far off place as Canada, where he elects to fish and rarely does. After a paper is read at a medical society there is a general exodus by those proud souls who would not adulterate their scientific cerebral stream with any such vulgar founts as "business of the society," "reports of committees", and those other processes quite vital to any medical meeting. At the state meeting God's chosen doctors arrive on the train a few hours before they read their own papers, step with conscious importance to the stage, listen somewhat tolerantly to the discussion following and are gone again, back to their proud city that can scarcely spare them for the day. It almost makes one incline to aristocracy as the primary plan of government.

What about all that organization and machinery that made it possible for them to come and have an audience? And their answer, quickly and decisively given, is that let those who like that kind of thing do it. That always there are doctors who are not quite as successful as others, whose time hanging heavily had better be employing their hours that way than in idleness. To this writer this view held by rather too large a collection of medical men is at the bottom of a lot of our misadventures with legislators and the public. Seldom examined it is never the less all important. Put straight and briefly it is just like this—a large percentage of successful, busy, well trained, exceptional and outstanding men will have nothing to do with the organization and business side of their profession viewed as a whole.

Occupied and opulent they seem to say "Go take care of yourselves as we have done." They have not taken care of themselves at all—they are simply riding over highways others have built and are building. Ever so often these of the elect, plow in the course of their busy lives, into a mal-practice suit. Occupation and opulence are shining marks for shyster lawyers and calculating malignerers. It is surprising how quickly these gentlemen look up the personnel of their medical society and discover somewhat tardily who are their officers. Gladly they avail themselves of the proffered aid. Solidarity is a wonderful blessing. But after all is over, fellowship is something of a bore.

We are always casting about trying to make the outsider see the many benefits of a medical organization and to come in with us. Laudable as that is and necessary we should not forget those highly successful and well trained men in every community who absolutely ignore all the activities of their state and local societies, while still retaining membership. Some way they think their personalities and skill alone have been responsible for their success. Doubtless in a measure they are right but if all had shared their view since time began there would have been no progress and like as not no medical profession.

Now we have also that celebrated contention of what it is a year that we could make and still keep out of the comic papers as robbers. Considering our long training, what we go through to get our education, our uneven hours, the breadth of conception that must be had concerning this mundane life, it is in many ways much too little that we get. We were away this summer and learned that in one small community where we stopped some few days they were considerably exercised that no preacher considered the modest stipend of $3,500.00 that they had to offer. Grevious lamentations were theirs over the fact that they could hope for no missionary to their belated pulpit until the sum was raised to $5,000.00 and probably $6,000.00. Calls from God are not as before. Now there are many good preachers that are still trying to educate a whole house full and be respectable besides on two thousand or less but it of

course cannot be done. A good preacher is worth $5,000.00 and if he accepts less he probably is being fair to neither himself nor family. Usually he has a pastor's residence besides and certain emoluments which fall as life comes and life goes and in between is married. Now if $6,000.00 is accepted as right by those who admonish "a laborer is worthy of his hire" then no doctor of medicine has any right to labor for less wherever he is. The false modesty we have on this matter is important only as something to forget and regard as obsolete.

It is peculiar, is it not, to find that doctors—especially those high and dry in well established practices—have actually no interest in the fact of how their fellow practitioners are faring. There is a reticence among doctors about this that is somewhat traditional and has about as much common sense to it as the time honored backwardness of mother to daughter whereby the latter learns in the schoolyard instead of at home that the famous bird known as the stork has nothing whatsoever to do with populating the earth.

"You charge what you will and I'll do the same" is the medical slogan and heedless is he that treads on this prerogative. We have figured in two fee bills for this society. Dr. Thornton and ourselves were designated to arrange one years ago, we spent some time and thought on it and consulted divers pamphlets and tomes. Our reward was that we were burned at the stake and our fee bill along with us. With two others we tried again—later. Undaunted by the scars from the former catastrophe we presented it when we met in the high school. It was passed and by a good margin but some there are who assail it even to this day. The objection to a fee bill is really a matter of vanity at the bottom. We might as well admit it. Each man cherishes the feeling he has a little extra touch to him the others lack. That hidden within him is something akin to the violet or X-ray that penetrates and perceives where his colleague must be content with instruments of precision. As you look at it squarely there is really some modicum of truth in this view, but it ought not to be carried beyond the point of reasonable limitations. This view oddly enough acts in two directions. We find one man with Locomobile ideas charging $1,000.00 for a little twist invented by himself whereby he extracts the new born baby out into the light of day. He gets results. No one need go to him unless they choose. On the other hand someone else has a big hospital equipped on the order of a Ford plant whereby quantity with equally good results is obtained. Voters make an advent in large numbers. Where will a fee bill equalize these two birth emporiums anymore than it will in every day commerce in automobiles! At first blush it looks impossible. Go into any city and you will find one good man doing a tonsillectomy for $100.00, another for $50.00, and still a third for $25.00. You will probably find the work of all three uniformly good. They all contend they have the right to do as they please. We think we are getting away with this. We assuredly are not. The laity is so well instructed on this variance that we simply make ourselves look ridiculous. There are points of excellence in various situations and operations, performed by men superior or specialized in such lines. Which of course make for varying charges. You could not expect Crile to do an operation for the same fee as an obscure surgeon in a small West Virginia town. Strange to say you will not find much variance. The wide diversity is one of the most pernicious factors at work in the medical profession. It gives the layman his first belief we are not at one with ourselves. There is nothing gives the average man a greater satisfaction than to get an estimate (which probably ought never be given) on something or other and then go to someone else and get so wide a variance that he begins to doubt the integrity of the whole profession. It is like the hawking and selling in the oriental bazaars. Take a T. & A., for instance. We could hire a man with manifestly diseased tonsils to go around to every doctor in this town and get an estimate. It would make delicious reading. We would like a mother to take her child who needed a circumcision on the same glorious pilgrimage. When WOULD THEY THINK OF US?.. The variance

they were both through we ask you, WHAT in the T. & A. would be overy fifty dollars. That of the circumcision at least fifteen. With some they would both be negligible operations. With others the T. & A. would be a major operation and rightly so. What do you suppose the layman thinks? He doubts us. Both of these diversities cannot be correct. One or the other extreme is incorrect. He thinks if we do this on something he knows about, what will we do on something he does not. Furthermore, if we have such varying prices and judgments on such minor matters he develops the suspicion we are inclined no doubt to be just as much at odds on other things. He loses confidence in the whole profession. The single priced, nationally advertised article should have given us a clue to this but we did not take it.

It is a thing of importance to us here in Wheeling and West Virginia to try and find some common ground on this matter. Some way or other we think we are in a different category in this concern. Some way or other we think that what applies to other men does not apply to us. We are not trying to say that all major endeavors should not have their special fees. It is easy enough to account for the difference in fees in such matters It is easy enough to explain the extra fee that experience or special skill should bring. But in the well known standardized performances we should have some common understanding. If we do not then we shall assuredly suffer and some doubt will be cast on our integrity. There are in every doctor's list of patients those who would pay him anything he asked, be it what it may. They would delight to honor him in this way. Generally this is done handsomely to a very popular man or one with a high grade selected practice. He should remember that in his eminence he is still to some extent his brother's keeper and give some thought to those who are having their difficulties.

We are the poorest men considering what we train for, how long we are at that training, and the character of our service afterward. It is strange the predicament we seem to have arranged for ourselves. If you get an abdominal binder out of stock it is a certain price. If you get it made to order it is higher. If you get a stock part for your motor car it is one price. Have it made to order it is higher. Have a lawyer give you a deed on a circular form, it is one price. Have him write a special one, it is much higher. Have some Christmas cards out of stock they are such a price. Have a special order they are higher. Take what is on a bill of fare ready to serve it is one price. Have it cooked to order it is at least one-fourth more.

Everything a doctor does is special order. Each patient presenting himself is a special case. But no one so considers it. A doctor will make a trip, weigh the symptoms of a case, and come back to his office at a less price than the taxicab charges would be for the same trip. Furthermore the taxicab charges will be paid in cash, which I believe generally considered is worth one-fourth more. You hear that people are poor and we are charging all they can pay. We well know that this is a dangerous subject to take up and a doctor so doing it on being reported generally is the subject of some comment but will you explain why it is that the doctor is censured for any increase? Our advance on anything we do is not fifty per cent of what it used to be. Our old preceptor thirty-five years ago averaged very near to what we are now charging. We know because we helped keep his books. On many things he was higher and his office equipment was a mere bagatelle to what is required now. All other activities have advanced one hundred to three hundred per cent.

We have built up a careless reputation for ourselves. Through the years we have thought we were being the world's premier humanitarians. Because sickness catches a man under more or less dramatic moments when he is a pitiable sight and caught, let us say, off guard, we have waived the collection of our dues and told him to wait for summer skies with the result that when we next see him it is again in the storm area.

Medicine had to fight its way out of a condition where anatomists must perforce work in a cellar. Descended as we are from

superstition and barbers using medicine as a side line we surely did have to spring from obscurity and persecution. From this apologetic beginning to respectability was a long fight. This apologetic air we have never realized over-come any more than we have the horror of some things which we have in common with the ape. Had we the right idea (which is easy to say now in retrospect) we would have seen to it that we were recompensed first, and it would have been considered almost indecent not to have always had something laid away if the doctor was needed. They say the "installment plan" will ultimately bring on a panic of tremendous proportion in America, and if it does we are the real fathers of it, because we originated the partial payment plan which is only to be paid when it is easy to do.

There is not a doctor here tonight within the sound of the voice who has not had once but many times the cruel experience of having someone owe him a large bill for over a year only to see the patient purchase a new motor car or a house and lot twice what his income calls for. If you can extract any bright side out of such a proceeding you are indeed an optimist. This careless maneuver is not only a display of contempt for our profession but an insult to all our great medical men of the past, and to make it worse they add a fine touch of irony by paying irregular healers either (what is the usual custom) in advance or let us say on the "cash and carry plan."

It has been said the new man is responsible for this. Coming into a community he is willing to work for almost nothing to build up a practice and to make things look well he does not care who sits on the front porch so long as it looks like an overflow from the office inside. He therefore undoes all the good work built up by his older associates. Of all the men who need to be paid promptly the new recruit is that very one. When a graduate was wont to use the first five years up in adapting the illnesses of the community toward obtaining an internship this might have been apropos. It is no longer true nor do we believe the new man is responsible as accused. Most new men we have seen in the last few years did more towards uplifting the prompt payment of fees than certain of the older ones. We must collect our fees promptly or else make the contempt grow more and more each year. This brings us up to the state-wide agitation to bring this about.

Much of what the medical profession agitates about its own business affairs comes to naught. The hypocrisy of all of us in the matter of being "too proud to collect" is well understood by the laity who appreciate the funny side of it exactly as they do the semi-dignified ostrich who places his head in the sand. In many ways it is rather sad that it is so. We all know of the so-called "white rats" in hospitals who stay around all their lives as resident physicians simply because they would rather, like friars in a monastery, abide in a lowly position than go out and wrestle with the rigors of the business side of medicine. As a result of their pure idealism, restarch workers—the saviors of mankind — are ridiculously paid. It is debatable therefore that because we that are out in the world must remember an adequate competence we are therefore crippled as to our scientific side. This writer, a firm believer of personality in patients as a vital factor in their cure, denies this statement yet there are better men than he is who will always affirm it is incompatible to be an excellent business man and a fine progressive member of the medical profession.

A prominent business man in the Rotary Club leaned over to Dr. Turner Morris and myself the other day and said, "You doctors ought to hand over your money as fast as you make it to someone to keep for you because you are the poorest business men in the country." Our reply was, "We make it but we do not collect the greater part of it owing to the tradition of our calling, so we would have little to hand over." He agreed with us at once by saying, "Yes, you are right. I know because my father was a doctor,' and he said again, "You are the poorest business men in the world." Speaking personally we no longer think this is a compliment yet with the "Bonnie Brier Bush" type of sacrificing doctor held as the

example of a beautiful life we doubt if we will ever out-live this traditional picture of ourselves given by this business man. Of course we could have told him, "The Rotary Club in which he was sitting that day was trying to live up to unselfish ideals we have had for centuries in the medical profession," but we didn't.

The public never takes us very seriously in the collection of our accounts. Whenever a doctor launches anything about his business affairs and makes a determined effort to collect a large percentage from his careless clientele, he is patronized by a laugh half incredulous, half resentful and it makes us think of that verse in the Rubaiyat:

"Why," said another "some there are who tell,
Of one who threatens he will toss to Hell."
The luckless pots he marred in making—Pish!
"He's a Good Fellow and 'twill all be well."

We are the world's best "good fellows" and there is nothing to compare with us save the "old soak" in the pre-Volstead days who would treat the crowd in the corner saloon with his last dollar. There are exceptions. There always are. They are cameos that stand out in bold relief, and they are courageous fellows but the strangest part is that they succeed—these business doctors. We heard recently of a family who hired a certain doctor if they had money and another if they had not.

Some way or other we have a fixed idea that we lose caste if we collect in a business way. It was considered the height of courtesy years ago for a doctor to never present a bill until he was asked for it and then he was supposed to go through a formula about "Oh let it go until some other time," or other similar foolish phrases.

We shrink to quote "The laborer is worthy of his hire" but it is after many years, more true today than ever. Nothing that we know of is so open to criticism as our attitude in the past on giving away our services. We have gained very little by it —when every other line was charging for everything and looking more and more askance at the legend, something for nothing." The public has this very firmly fixed in their minds and while they attend our free clinics they have the proverbial feeling that somewhere there is a Senegambian in the woodpile. They will not attend cancer clinics as they should simply because they believe it is a scheme to get material for operations. It isn't, but they do not look at it that way. In the Rotary Crippled Children's Clinics it was next to impossible to get one-half of the children there. They suspected the gift. They were wrong but you can hardly blame them.

The state association is trying to remedy this and one of the methods is a series of posters to be placed in the newspapers. It is not the province of this paper to discuss their merits. It may be they are not the thing. Something will have to be done to raise us out of the mire we are in, of giving away our services free in many cases, not receiving our just dues for others and waiting a longer period than anybody else for what we do get.

It seems to us the best answer is to stand together and hold in contempt the man who violates the standard. There will be some, there always are, who, to gain their own selfish ends, will work for less, or give some other inducement to gain a competence. It will be well to hold these as a menace. Because in these days of organization if we have no cohesion then it is well to admit we are helpless and cease complaining. A state credit bureau with the secretary of the association has been suggested. The idea was to raise his salary and have him form a collecting agency. Then pursue the work in each county. Those who habitually fool us would run very soon into very uncomfortable quarters. We have gone to great lengths on this matter of payment because it is generally admitted something will have to be done. We have long listened to the futile song that we are a dignified profession and are accorded certain mysterious rights and honors and prerogatives by the state and public. Personally we have never seen them but we have seen a certain prejudice rising up which has absolutely no basis in fact, and this prejudice is evidenced in legislature and elsewhere in sufficient strength to have laws passed directly against us. These things tend to correct themselves

but there is some inconvenience in the interval.

The subject of irregular healers has been up as a topic of discussion until in the common parlance it appears somewhat stale. The medical profession has ever been divided on the best method to pursue. One following believes that to let them go and engage themselves in their own adventures and devices until the complexity of their position overwhelms them is best. This view of the matter necessarily involves the loss of some individuals' lives it seems to us, but in these days when the automobile kills so many with very little being done about it, a few (comparatively speaking) dying due to their having their spines adjusted when they ought to have had 20,000 units of antitoxin will probably give little concern.

This brings us up to a peculiar condition and one well worth considering. The idea is in no sense original with us as we got it from a railroad fireman's letter to a New York paper. He wanted to know why it was if three or four people were killed on a railroad it was made the subject of innumerable investigations and all the moves were carefully checked up while if it was instead an automobile wreck on a highway and the same number killed very little was heard of it so common had it become. Likewise as a physician we would also wish to inquire why it is when someone inadvertently dies under anaesthesia or in having some operation it is immediately stuck up on the front page of your newspaper whereas if they are run over by a careless automobile driver who unlike the surgeon is exercising no carefulness at all, then your favorite morning paper will put this over among the stock reports where it is viewed as a necessary adversity just as the vicissitudes of the stock market. The family of the injured in the doctor's case will sue for $25,000 to $50,000 for the loss of their beloved while it will probably be a miracle in some cases if they even locate the fellow who did the "hit and run" in the automobile catastrope. These things are quite incomprehensible to us and only after talking with some celebrated lawyer do we learn that death, strange to say, can be different. Now in each and every case the injured is, to say the least, dead. To a practical physician with no judicial training "to be dead" is after all to be dead, and, like the simple-minded fireman, he would fain inquire why to be dead when struck or injured by a train or alleged as a result of a surgeon's care adds so much to the value of a corpse over the appraisal of another rendered so by a Rolls-Royce or a Fiat.

But to return to the irregulars. The other contingent is in for open opposition and are ever alert to protect the public against the cults. The public winks the other eye and says the profession is giving them little thought but are merely protecting their own pocketbook. The quick answer to this little view of the man in the street is that irregulars have affected next to nothing the yearly stipend of any doctor. A doctor is poor usually for one reason only and that is his failure to collect. Any worthy doctor anywhere is making a good honest yearly compensation. He does not know how to collect with dignity. Irregular practitioners have little if any to do with any doctor's entering bankruptcy. Any fighting we have ever seen or been connected with in regard to irregulars has been to uphold healing as an art and to protect the public. All criticism to the contrary this is actually so. Without going into the matter very deeply we are willing to admit the spine adjusters and all other similar cults have seen the noon-time of their activities and might as well get ready for the inevitable sunset and its concomitant zero hour. The osteopaths are becoming so scarce that they are negligible and while we can't vouch for it we believe many have taken additional studies and become what they should always have been — doctors of medicine. Often-times when we have been in the midst fighting some cult we have heartily wished some of them had taken a little more time and become regular men. No one would have objected to their specializing on the spine (although we doubt if they would) and they are such good fighters and so many of them have such good personalities we would welcome the day the better ones would lay off and do as the osteopaths are here and there

doing, adding some more to what they have and making the healing art a matter of singleness of purpose.

There are the "Christian Scientists"—have you lately considered them? Reflect! Have you heard so much of them stepping in on every opportunity? No you have not. That is because they are beginning to see like their "Great Mother," who certainly was a personality, told them "Until the light of a better understanding is upon us or you get into greater harmony with the all pervading love which is Christ it were better in the meantime to consult the suggeon for broken bones and other similar conditions." This is no exact translation but it will serve.

One may ask, if any important advancement has been made ethically amongst us? We still have a long way to go for anything that looks like perfection, but socially we have advanced remarkably. We used to stand back in admiration at two lawyers who assailed each other in court, not only personally but oftentimes physically. When they were through it would look like either one or both should on their own evidence be run out of town,—only later to witness their going home after the trial arm in arm. Today they have nothing whatsoever on the medical profession who have no hesitancy in purloining each other's work with what one might call the best of feelings. You hear about a doctor absolutely lifting a case from one of his "brother officers." Called in at the house he has made no effort to give the other man anything like an even break It is vanity again to the fore. He believes in fore-ordination and feels that God sent him in time to supersede the other doctor and save the patient. There are lamentations from the superseded. In a couple of weeks you will find the two rivals have gone to Canada together on a fishing trip. What effect this has on the patient it is hard to tell but it is really a comedy and not the tragedy it appears. However there is no doubt a big ethical move in the medical profession. Ethics is a matter of boyhood days—that is all. The majority of boys with all their rough play and tricky exploits are at heart honorable and fair after their fashion. Here and there is a bad one. When he grows up he may be very successful as he was in acquiring marbles in the schoolyard. But he will not have a sense of fairness because he never did possess it. He should be regarded more in sorrow than in anger. The majority of medical men are very, very fair to each other nowadays because they see the futility of anything else and we congregate oftener and working together more and more we know each other better, and it has had a startling effect on the whole picture.

We regard each other with a humorous tolerance and say what you will humor is the world's best prophylactic as well as cure for many real or fancied animosities. Every once in awhile one of us becomes inflated with a deep sense of our own fitness. Progressing, a series of three hundred cases with a mortality of one-half of one per cent, results. Our colleagues merely sit around and are intensely amused at us after the fashion they would be were they contemplating the outpourings of the Honorable Andy Gump. Bye and bye the balloon bursts, down comes the enthusiast and the late cynics all turn to tolerant sympathy and wish to know if the chastened one had a parachute in his equipment. That the profession can so lightly and easily see each other's foibles and failings may not look like a big ethical move. As a matter of fact it is the outgrowth of a long evolution involving open warfare, bitterness, pettiness and jealousy into the stage of understanding and tolerance.

Every state association should have a building and now that the building committee of our state society has been named we should begin to see our hopes realized in this direction. As a matter of fact each large local society should have one and will soon in all alert and progressive localities. Had the Ohio County Medical society been a little more courageous and had better luck in its realty ventures we should have been in a building by now occupying quarters with an academy of medicine. These movements require straightforward common action which means that several men in a society must be absolutely trusted by their

fellows. No amount of personal aggrandizement can for a moment be suspected when a major movement is on like obtaining a building as well as its location. Ever and anon in such a project will appear the man who elects to take a great deal of the credit without in the least doing any of the work. While a source of irritation his presence and his appropriation of credit must be considered as one of the necessary evils and those who work because of the love of it have little else to do but go on. Buildings to us typify solidity and solidity in our vocabulary is among the first ten words. The Egyptians were a great people, probably not any greater than a number of other great races of the past. But they had the good sense to leave the pyramids not to speak of the sphinx and so they are never forgotten. The public, let us repeat, honor us for our administrations to them and they are as no doubt grateful to us as human capacity allows but a little scratching of the surface will show they do not think much of our activities in an executive or business sense as related to our own profession. They sense that we are not exactly hundred per cent as regards cohesion.

To be sure we are not and a building of our own would not make us so either but nevertheless it would crystallize a feeling of respect for us. It would indicate we had faith in ourselves and each other, that we were engaged in a lasting profession and that somewhere incoherently or inexpressibly hidden we were there as grounded in the soil, permanent, unyielding, solid and would as such quite forcibly fight for our titular rights. It would in a sense advertise us in this blatant age of advertising and do it in a manner favorable to our traditions. A hundred or more dollars in such a building would indirectly pay back many handsome returns. A doctor who objects to twenty dollars a year dues will not see this and that is because he has not the faith in himself or his colleagues or in Emerson's well known ideas on compensation. But to the many who would have us always in the front of life's ever advancing cohorts it would be money all well spent.

Then too the religious would be nowhere had they no buildings. Your answer that our offices and our hospitals are our insignia is beside the point. They represent us individually and as individuals we probably are able to take care of ourselves now and for that matter always have. In fact we are usually so busy being individualistic we have neglected the larger aspects of solidarity and we are a little late in our present method of banding together in twos and threes and tens. There is one main ideal today and that is "Face the facts as they are and act in accordance." The flippers and flappers of today are only evolutionary steps that youth is taking to bring forth boys and girls later on that shall take the world and separate that nebulous term beauty from that more apparent term ugliness and make the most of the differentiation. Most of us doctors absolutely refuse to believe we have had the biggest hand of all in this present day idea called "Missouri" which is nothing more than "Tell me the truth for I will find it out anyway." We are the lads who have carved the way for luncheon clubs to recognize the meaning of the word Service so largely now overemphasized. We are the men and women who have insisted on knowing as much as is possible of the actual truth. The advertisers say Truth in advertising. The Preservers say look at the label. They little reck that we made it possible, showed it could and must be done. We are so industrious with our laboratories; our serums; our operating rooms; our discoveries; our statistics; our cures; that we are lost to our ethical value which we regard cynically and which nevertheless is tremendous. Had we had buildings all these years which stood for us we would today be heralded as the sanatoria of the soul as well. And if in the next fifty years we do not get the buildings though we introduce an insulin every year we will ultimately be overlooked and forgotten.

There is too much of an idea prevalent that it is all right for the other fellow to attend the state meetings. There are doctors who will run all over the country to attend a meeting of a fraternal order but if it is suggested they join a band that is going to a state medical conclave will look back in

utter surprise and bewilderment and ask: "How do you suppose I got the time to go there?" It is true you will read the papers later in your *Journal* but that is only a part of the idea of the yearly gathering. No doubt the man that stays at home is often the best paid man in his locality and we will have to pardon his feeling that as he is the most popular, most sought after and best remunerated man for his sector he naturally gains the belief he needs no more polishing off since he has all he wants. It would be well for him to recall some old very expensive automobile frequently seen as operated by very wealthy families who could afford ten new ones. They have a chauffeur. They are referred to as having the finest engine in the city. They glitter with brass and upholstering. They have flower holders conspicuously placed. They occupy a whole half block when they park. They ooze with respectability and opulence. BUT—and that is always the important word—ask the man that does not own one whether he would rather have it or a new model with all the many little conveniences (that make a car one of today and now) of a good but less expensive make? A yearly medical meeting held by the state society is nothing more nor less than an institution to make a doctor into a yearly model. The engine is not changed much. The clutch works pretty well as before. There are still four wheels, four tires. But—you know all those little refinements they add each year. That is what the state meeting does, so how can any one afford to miss it?

Someone at state meetings is always hoping for someone to come along as a donor and having matched up to give it NEW BLOOD. To change the metaphor and go back to automobiles they want the yearly refinements a little more radical, like a new substitute for gasoline and a tire that won't puncture. Most of us get like that every once in awhile. We have tried several puncture proof tires ourselves with unpleasant results. Were there no young men with a desire to overthrow the existing order, there would be no progress but where ever in the world's history it has been done suddenly disaster has followed. The United States Senate has had new blood injected into it a number of times. We do not know whether a diagnosis of pernicious anaemia was ever made on it or not, but the transfusions so far have done nothing to raise the red count. Whereas we believe a little more iron of common sense (and it comes from experience) would almost affect a cure.

Nurses going out of this state are frequently annoyed by the requirements of other states. In most cases these extra features are quite trivial. It is up to the medical profession of Wheeling and elsewhere to make the hospitals in which they are interested so nearly perfect that no just cause for complaint can be found. Likewise internes who serve their interneship with us and obtain a license to practice within the state encounter strange refinements when entering Pennsylvania. By many these barriers appear in some respects absurd and without any tendency to raise the general or fundamental standards with which of course we would all sympathize. As a patriotic duty to our state and its institutions we should give some thought to this.

The State Compensation Department demands our earnest attention in other ways than the mere obtaining a fee in some given case. We must remember we are not the only parties connected with this institution. How many of us reflect that the industrial organizations of the state are concerned in the reduction of the expenses they are charged with in its operation while we are interested in a more adequate fee? As usual the state legislature is meeting and we have failed to go over this important point in our state societies. With these points the State Compensation Commissioner has little to do whether the total amount is $300.00 as it was before or $800.00 as it is now. Perhaps it would surprise you to know that one hears rumors that there are certain agencies would like to see it come back to $300.00 again? Perhaps you will see this as more than a rumor. There are some of us who are a bit careless in making out our bills and when we list a long bill of daily visits after a simple fracture we should recall that on the face of it the procedure is not con-

ducive to an opinion of careful original handling. Unless it is an infected case we would scarcely see it every day to dress it. By sending in a bill like this (and we have no doubt all done it) we merely make the generally good suffer for the occasional bad. In Ohio I believe fractures run in block sums so that the visits, barring complications, are of no value in the total sum charged. Watch from day to day the action of your legislators in regard to the Workman's Compensation Department. It may repay you. Some card or ticket should be given an injured man or whoever brings him so that a doctor could recognize a bona-fide injury from an authorized agency. As it stands a man can come into the office, with an injury, represent he was sent by a certain company in a hurry and on humanitarian grounds you will probably attend it, only to find out he was a transient and you are destined never to hear of him again.

The main thing to recall in all this state compensation question is that a comparison with the rates of Ohio is illuminating. For instance, Ohio pays $5.00 for a bed while West Virginia pays not quite $2.50. The cost of a bed is about what Ohio pays. At present the rates in West Virginia on many injuries are at least moderate, in some cases as in inguinal hernia, very much less than elsewhere. No industry can work its destiny at less than cost. Neither can a hospital or a surgeon. The whole thing is quite simple, it cannot be done. Wherever any band of doctors or a hospital attempt to maneuver around established rates they do injury to the peaceful settlement and operation of a purely economic question and only delay a just equity to become established.

The legislature on other topics should be watched. The "anti-vaccinationists" the "anti-serumists" and the "neuropaths" feel they should have seats on the boards of health. Someone has said a bill to divide us into internists and surgeons might be considered. These questions may never come up, but if they do and pass it is to be remembered that they came to pass because too many doctors were just lazy about "shooting in" their support. If they fail after coming up you can rest assured a few courageous souls more virile than you and I, smothered them.

The state *Journal* is managing to function pretty well. Some of the papers appearing in it, to our mind, cannot be surpassed anywhere in the country. For instance, Dr. Butt's recent experience with incising the stomach in the case of the man who ate the frozen apples and the cabbage. You will recall he could find no record of a similar experience in this country and only one in England. But the *Journal* needs your individual case reports at once. Make them brief of course but do not hesitate to do it. It is your duty. It will help to make it, what we hope to realize, one of the very best in the United States.

It is well enough for each individual to consider birth control. Which side you may take on it is not the important matter so much as that your position is backed by your intelligent consideration. The chances are at present you are against it but the main idea is that you know why and not just because you are against anything so sweeping and so revolutionary. Ultimately it will come up for some kind of action. In Cleveland recently the matter was very seriously discussed.

The matter of dues and assessments is important. Twenty dollars would seem to be a rather high sum compared to years ago. However when you look around and see what we easily pay twenty dollars for in connection with our automobiles, our vacations, our little social evenings, not to speak of the dues in other clubs, it makes twenty dollars seem almost not enough. We should be ashamed to complain any longer of it and instead we should try to arrange to give even more as we see the opportunities for spreading into new fields arise.

We meet every two weeks; we bring important men before us from distance places; we have all the benefits of a post-graduate course; and we should be trying more than we are now if we were but just to ourselves. Because you do not stop to investigate is why you do not appreciate the idea of a state secretary. We recently received a letter from a large medical association of

the South in regard to this idea and they had in mind there following our example. Next year the secretary will take over a lot of the details of the state meeting saving to the "White Sulphur Springs Society" the work that is a big drag on local and state committees. The state society is run in an absolutely business-like way and like a big corporation and for this young man Sterrett O. Neale we have nothing but the highest praise.

He is to be written to for any advice you need and as you are in a big profession whose business side has been sadly neglected all these years, it would be well to consider it so. If your compensation case or any other thing goes wrong, a letter dropped to him will bring a business-like reply promptly executed. Bye and bye your local society will have the same thing and could have this now had plans rightly materialized. Twenty or thirty or fifty dollars intelligently placed would and will in the next five years make us more and more free from many of our present perplexities. It is simply a matter of penny wise and pound foolish. We are a big system and as you know, incorporated—let us act the part.

This has been a hurriedly constructed hodge-podge paper and intended only to be provocative, as they say in the venereal clinics. Let us stop before closing and look at what we are and what we have been. We have said that we smilingly steal from each other, laugh at each other, occasionally malign each other; we even threaten each other, but in the long run, we are pretty well disposed to each other and in crises, saving a small percentage of malcontents, we vigorously back each other. The public sometimes thinks we have a trust. Wish it were so, it would be better for them. We all know that the reason we rush to help each other is because we are dealing every day with uncertainties. In our experience we say honestly we have seen little that was negligent in the medical profession. We have seen a lot of poor judgments in which we have largely figured ourselves but they have, it seems to us, been often the result of reading symptoms that ordinarily mean a standardized result only to find later in these instances of failure they meant something else—in other words they were the frequent exceptions to the rule.

Slowly we are becoming a well organized body and it has been said the slowly evolving things are the only ones that last. We oppose each other more like the two political parties. In the open we compete—in our other moments we are the best of friendly enemies. We can always remember Dr. Thomas Haskins' farewell speech before leaving the city at the Windsor Hotel addressing the Ohio County Medical society. "Gentlemen my one mistake was that I did not go on with you and not try to battle it alone." Had Dr. Haskins felt this way in his early career there would have been no limit to his honors. A big vital personality like Senator Borah, he chose to remain outside the society.

Let us then have our personal differences. We can't possibly all like each other. If you are one of those fellows who believe that it is best for the public good that you be called in as a court of last resort and you do it without much regard to the feelings of the other fellow, why it is well that you do it nowadays good naturedly instead of, in the old, often-times, malignant way. Of course if you are not the court of last resort—and sooner or later it will probably turn out you are not, you will—all opinion to the contrary notwithstanding—suffer in your own loss of self-respect. But when it comes to an idea or a question of the whole profession let us forget the personal and above all let us try and get into office those who will work for the professional good and not only as an honor. Doubtless they can be combined. But we have suffered in the past from this. Today an officer is somewhat of a slave, for a professional man who is holding an executive position in any medical society and is doing his duty is necessarily performing a lot of drudgery without honor and is only a servant of his fellows.

Without vanity we say therefore that we have many faults but if there is anyone yet who furnishes the imitations of the Saints —we do. A weary world may spurn us—and does, even crucifies us but when it comes to looking them over for every day plain

practical faith and works they usually land on a doctor. This applies to the dapper rather cynical metropolitan physician as well as the rural Bonnie Brier Bush type.

There are men here tonight who have all the elements of the prophets—some who have all the practical goodness of Peter or a Paul. Always in the trying hour it is not to a chiropractor or even a preacher but to you they turn, and they turn not always to you for mere relief—it is your counsel in other things they want. Deny it as you will, you are the forerunners of a practical religious life to which they all aspire, some place, within them. As you look at yourselves doubtless you are cynical enough to wonder where anyone could possibly discover much that was religious about you. As it is usually measured we are afraid they couldn't. But this so-called "sun rise the world is waiting for" is more practical perhaps than the present orthodox one. It will have to be one of deed and not one so much, if any, of purely prayer and exhortation. That is where you will possibly shine. With your possible profanity now and then; your grim despair at suffering and the need of it; your possible violation of the eighteenth amendment; your excursions into numerous violations it may be, of the prescribed decalogue,—you may still underestimate yourselves. They are small matters compared to the unselfish good you do; your aims (so pathetic at times) to make the world whole and sound; your attempt to be candid and true and frank, your ethics violated as they are. We are not here to pat you or ourselves into the belief that we are the hope of the world. Nevertheless we have unconsciously been going about our work while the others who are engaged in the business of saving the world have been only too conscious of the matter. Very few doctors we have ever seen stand up and say, "Lord, I thank Thee I am not as other men are." From that vanity we are free. We hope we always will be.

It will naturally be asked why go over all this rather old material again and again. For this reason and this reason only, "the scientific and technical side of medicine are covered time and time again in every ramification. Very little is to be added in any way. But the 'extra-scientific' side is neglected sadly and our relations to the public outside of medicine are forgotten too and this is one more reminder that unless we want state medicine we had better consider them."

So in closing we quote the *Wheeling Register* of Thursday, to show what a sophisticated newspaper has to say.

Progress in Medical Science

"When you get the blues and think that 'all men are liars' and that the world is going to the dogs—and deserves to go there—just read a few chapters from the recent history of medical research. Many scientists are working — working hard — receiving small salaries, and not asking for 'raises' to find the cause of and the treatment for diseases. They are doing this, not for hope of gain, but solely from a desire to benefit the human race. Some people, not doctors nor scientists at all, are lending a hand. Stephen Leacock, the humorist, has pledged all his future earnings to help fight cancer.

"What was it that brought this to mind, just now? you are quite right to ask. It was insulin. You are aware, no doubt, that insulin is an effective treatment for diabetes. Diabetes is due to the lack of a certain substance that is needed to enable the digestive tract to digest the sugar we eat. The result is that we do not get the sugar that we need as food, and (worse) the sugar gets into our blood, where it makes us ill. Insulin is simply that needed substance, produced in the laboratory. The laboratory does the work that the glands are no longer able to do. It is an important achievement.

"Now, since insulin helps you digest sugar and since sugar is one of the most fattening of foods, it is proposed to give insulin to under-nourished children. Experiments are now being made to that end.

"The thought of a man, who might be earning a big income, accepting a small salary and then working fifteen hours a day, because he wants to make a lot of puny children strong and healthy, does make you feel that there is some hope for the world, after all."

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THE TREATMENT OF ENDOCERVICITIS *

By LEO BRADY, M. D.
Baltimore, Md.

IN an article published October, 1925, [1] I presented a preliminary report of the results obtained by the treatment of gonorrheal endocervicitis with strong solutions of mercurochrome. This afternoon, I wish to add some further observations which we have made since then in the study and treatment of this condition. The exact method we are using in treating women infected with gonorrhea is as follows: Each patient receives douches daily except during the menstrual periods and on days on which smears are to be taken. Twice a week she is placed in the lithotomy position and the external urethral meatus and region of Skene's glands are painted with 20 per cent mercurochrome applied with an ordinary cotton swab. It is very unusual for these applications to cause any burning. After this the cervix is well exposed with a bivalve duck-bill speculum and all of the cervical discharge wiped away. When this so-called cervical plug is very tenacious, the use of a little hydrogen peroxide or soda bicarbonate solution is helpful in removing it. The entire vaginal portion of the cervix is then painted with 20 per cent mercurochrome and, finally, a small amount of cotton is soaked in this solution and by means of a thin wire applicator, such as the Brown applicator used by the laryngologists, is introduced into the external cervical os and carried through the cervical canal to the internal os. This last step, namely, the application of the antiseptic drug to the endocervix, I consider the most important step in the treatment.

In women, gonorrheal infection is primary in one or more of three localities—the urethra, Bartholin glands and the endocervix. A great deal of importance is attached by some authors to infections of Skene's glands

* Read before the West Virginia State Medical Association at Morgantown, May 26, 1926.

which are adjacent to the urethra. In our experience, however, the number of cases in which a chronic gonorrheal infection is kept up by involvement of these structures has been quite small and, fortunately, in women, a gonorrheal urethritis is, in most cases, self-limited and, if not aggravated by cystoscopics and other instrumentation, will get well of itself quite rapidly.

In our series only three patients required treatment for urethritis and in them injections of a mild antiseptic solution quickly relieved the condition. When Bartholin's glands are infected, it is best to remove these structures, but to quote from Shutter [2]. "The incidence of infection in the glands of Bartholin is estimated at from 15 to 35 per cent of chronically infected cases." Without going into a discussion as to how often the infection is primary in the endocervix and how often, when in this locality, it is secondary to one in the urethra, the condition which we found to be present in our patients was an endocercivitis and it was toward the cure of this condition that our efforts were principally directed. While involvement of the vaginal portion of the cervix does, at times, tend to keep up the infection, it is from the endocervix (that part of the cervix lying between the external and internal os) that it is most difficult to eradicate it.

It is only in the young child, when the cornified layer of the epithelium has not yet formed, or in the aged, when this layer has disappeared, that the vagina is involved in Neisser infections. For this reason strong vaginal douches are not only unnecessary but are absolutely harmful in the treatment of gonorrhea in adult women, for they not only do not reach the endocervix but, if they are strong enough to break down the cornified layer of the vagina, they provide a path by which the gonococci can enter tissues from which, under ordinary conditions, they are excluded by a natural barrier.

A powder containing boric acid, carbolic acid and menthol not unlike the antiseptic powder in the National Formulary is used in the douches, but probably ordinary salt would be just as efficacious. In salpingitis and pelvic cellulitis the heat from hot douches is of real curative value, but in the treatment of uncomplicated endocervicitis all that douches accomplish is to carry away the discharge that is in the vagina.

Curtis [3]. in his very comprehensive work on the endometrium, has shown that chronic endometritis, *per se.* with bacteria present in smears or cultures is practically to be ruled out as a clinical entity, and that gonorrheal endometritis unaccompanied by salpingitis almost never occurs. We, therefore, make no attempt to treat the endometrium.

Occasionally, however, the applicator, with 20 per cent mercurochrome, slides so easily through the cervix that it impinges on the fundus uteri. No instances of salpingitis have resulted from this although we prefer that it should not happen. This seems the more remarkable since it is well known that many cases of salpingitis have followed the introduction of instruments through an infected cervix, sometimes even after simple cervical treatments such as the application of silver nitrate.

No glycerin tampons are used because without them we can better interpret the results obtained and because the dehydrating influence of the glycerin would interfere with the penetration of the mercurochrome solution into the deeper tissues.

Mercurcochrome was selected as the drug to be applied to the cervix because it has been shown by Young and White [4]. and by others that it has not only a strong capacity for antisepsis but also for penetration. The gonococci bury themselves so deeply between the folds of the cervical mucosa that it is absolutely essential for a drug to have this latter power if it is to be effective in the treatment of gonorrheal endocervicitis.

In order to utilize to the fullest extent the power of penetration of mercurochrome it seems to me that it would be wise to use a concentrated solution that was safe. We painted a series of normal cervices with tincture of iodine, another with 10 per cent silver nitrate and a third series with 20 per cent mercurochrome and two days later reexamined all these patients. Less local reaction followed the use of the mercurochrome than after the other two drugs and in no case

did any local destruction of tissue occur after its use. There was no instance in which any general toxic symptoms developed after 20 per cent mercurochrome had been applied to the cervix, nor did urinary examination show that any damage had been done to the kidneys. These facts make us feel that for the endocervix this drug is absolutely safe in this strength.

Rupel [5] of Indianapolis, recently recommended the use of a 6 per cent solution of mercurochrome for early gonorrheal infections in men, and Von Lackum and Hager [6] writing from the Mayo Clinic, state that in the treatment of gonorrhea in women they have obtained excellent results from its use alternated with some silver compound and iodine. These two latter authors paint the vault of the vagina with 1 per cent mercurochrome and place pure crystals in the external os of the cervix, but as the mercurochrome therapy is apparently carried out for only two weeks and no figures are given of the results obtained nor any account of the criteria used in judging whether or not the condition was entirely cured, it is difficult to determine from their article what was accomplished by the use of the mercurochrome. Up to January, 1924, when I began using 20 per cent mercurochrome in the treatment of gonorrheal endocervicitis in women, no other articles, except those mentioned above, had been published in which the clinical use of mercurochrome in strengths over 5 per cent was advised.

At the beginning of our work we fixed upon the following rigid series of tests as necessary for a patient to pass before we would say that she was surely cured. She must have three successive negative urethral and cervical smears taken at two weeks' intervals on days on which the vaginal douches have been omitted, be then released from all treatment for a period of one month and have a negative smear at the end of this time and no cervical discharge. We re-examined two patients discharged as cured after five months, two others after six months, two after seven months, and two after eight months, and as all these patients were found at this re-examination to have no cervical discharge and had negative smears our standard seems to have been sufficiently rigid.

The results reported in our recent article were briefly these: of 32 patients in whose cervical smears gonococci were found this treatment cured, absolutely, in 25, probably in four and failed in three cases. The reason that in four cases we claim only a probable cure is that although these women all had three successive negative smears, when last examined, and no leukorrheal discharge, we were unable to get them back for re-examination at the end of the month without treatment. As many clinics consider three successive negative urethral and cervical smears as proving that a patient is cured, we probably should be justified in claiming a cure in 29 out of the 32 cases. The three patients on whom the treatment failed all had, on admission, a history suggesting salpingitis and on examination definite evidence of tubal involvement and in two out of the three there was an infection of Bartholin's glands. After conservative treatments for many months with no result, I finally operated on them.

In this paper I shall make only a few remarks about the treatment of gonorrheal salpingitis as I have nothing new to add on this subject. I treated the patients conservatively, that is with douches and rest, and only operated when the symptoms were too severe, definite pelvic masses present and, at least, several months of conservative treatment had given the patient no relief. I might say, however, that I cannot agree with those gynecologists who are now saying that gonorrheal salpingitis is practically a self-limited disease and that unless the patient is being constantly re-infected an operation is almost never necessary. The patients on whom this report is based were all confined to an institution where there is absolutely no chance of re-infection occurring and yet a certain number, probably about 20 per cent, of those who when first examined in the institution had a salpingitis, finally had to be operated on.

After fifteen months' experience with the use of 20 per cent mercurochrome, we stated

in our first publication on this subject that this method of treatment, carried out as we had recommended it, had produced in our series a real cure in all cases of gonorrheal endocervicitis uncomplicated by salpingitis or Bartholinitis. The average time necessary to effect this cure including the month in which all cervical treatments were suspended was three and two-thirds months.

Now at the end of another twelve months we wish to add some further results that we have had with the use of this drug and at the same time to present a few general observations that we have made in the diagnosis and treatment of gonorrheal endocervicitis.

The work on which our first report was based was carried out on girls who had been committed, by the State of Maryland, to the House of the Good Shepherd. Here, the conditions for carrying out our treatments were unusually good, because nearly all of our patients were girls who had been committed to that institution for a period of at least one year, and were compelled to submit to the prescribed treatments. Moreover, there was no chance of a new infection.

During the last year we have had only nine new cases of uncomplicated gonorrheal endocervicitis admitted to the House of the Good Shepherd. These cases have been cured in an average time of four months.

However, wishing to try out further this method of treating endocervicitis and under more unfavorable conditions, we have, during the last year, employed these same procedures in the treatment of women infected with gonorrhea who have reported twice a week to the State Venereal Clinic which is held at the University Hospital of Baltimore. The prospect of obtaining any real cures among these women certainly did not seem very bright. Their attendance at the clinic, in spite of the splendid work done by the social service department assisted by the police department, was in many instances very irregular. In many instances, we would be getting negative urethral and cervical smears and the discharge would be almost gone, when suddenly the patient would show an entire change in her condition. Close questioning would almost always bring out the fact that the patient had again been exposed to infection and, unfortunately, coitus had often been with a new man. In not by any means all, for we have quite a few innocently infected respectable married women under our care, but in a great many of the patients reporting to these clinics morals are very lax.

In spite of all these unfavorable conditions, twenty women were cured at this clinic in an average time of four months. These patients fulfilled all the requirements we specified at the beginning of this work as necessary for recording a cure. Of these women, one has been re-examined four months, another five months and another six months after being released from treatment. There was still no cervical discharge and the cervical and urethral smears were negative. We also have to report twelve other cases in which we have obtained to date three negative vaginal and urethral smears and a disappearance of the cervical discharge—instances of probable cures.

Although, as is evident, we are not presenting any statistics showing in what percentage of the women treated at this clinic a cure was obtained, we feel that a report of our successes, by themselves, show that 20 per cent mercurochrome, even when used under conditions which are far from favorable, is of real curative value in the treatment of gonorrheal endocervicitis uncomplicated by salpingitis or Bartholinitis.

In addition to endeavoring to cure the unfortunate patients with gonorrheal endocervicitis, we have tried to derive some profit from this unusual opportunity of studying this condition by, from time to time, carrying out some special investigations. One difficulty in handling gonorrheal endocervicitis is to decide whether the condition is present or not. The series of tests we stipulated as being necessary before a patient can be considered cured is sufficiently rigid, but to determine from a single examination of a patient, even though smears are taken, whether that patient has or has not gonorrhea, is extremely difficult. Of the thirty-two proven cases of gonorrhea in our first report, in only

twenty-two was the first smear positive, in nine the second smear, while the remaining case was diagnosed only after several had been taken. The finding of definite Gram negative intracellular diplococci makes the diagnosis, but their absence from one or two smears in a case clinically suspicious of gonorrhea does not exclude that condition.

In an endeavor to utilize every practical method of diagnosing gonorrhea in women, we have, during the last four months, repeated some work reported, in May, 1925, by Danin [7] and vouched for by Opitz in the *Munchener medizinische Wochenschrift.* Danin's conclusions were these: The vagina of women infected with gonorrhea always gives to litmus either a neutral or an alkaline reaction, provided the examination is made at least two days before or five days after the menstrual period. An alkaline or neutral reaction of the vagima can be caused by many other conditions besides gonorrhea, but the presence of an acid reaction during the intermenstrual period excluded gonorrhea. To carry out this test correctly one must, as pointed out by Danin, follow a somewhat rigid technique. The litmus must be applied to the posterior wall of the vagina, thus avoiding the urethra which frequently gives an acid reaction due to an acid urine, and it must not be introduced so deeply into the vagina that it comes in contact with the secretion of the cervix, which is usually alkaline.

We have repeated Danin's work on fifty patients and have, except in one case, absolutely confirmed his conclusions. In that one case a vaginal smear taken eleven days after the menstrual period, contained gonococci and the vaginal secretion was acid.

The value of this test has, however, in our work proven very limited because of the difficulty in being sure that the test is taken in the intermenstrual period. A gonorrheal infection itself frequently upsets the regularity of the menstrual cycle and, as has been long known, children and young women confined to institutions frequently menstruate irregularly. Not infrequently, the girls with whom we were working would menstruate only every other month and, sometimes, they would go several months without a period. This test of Danin's, however, is worth remembering and may be of aid in arriving at a decision in doubtful cases.

During this last year, we have been again pleased as we were during the first year, with the fact that no cases of salpingitis have developed in patients while under this treatment. This seems the more remarkable when one considers that we start our treatments as soon as we make the diagnosis, no matter how acute the case of endocervicitis, apply our drug to the entire cervical canal and discontinue the applications only during the days that the patient is actually menstruating. This is all in marked contrast to what Shutter [2] says in a recent article in which he advocates the use of the cautery in the treatment of chronic gonorrhea in the female. To quote "Because of the danger of salpingitis developing extensive treatment has seemed inadvisable for two or three days before and after menstruation. Though tubal involvement has occurred two or three times after cervical cauterization in no instance did it necessitate abdominal section." Corbus and O'Conor [8] who recommend in the treatment of endocervicitis the use of a special thermothore, which they have devised, also state: "This method is contraindicated during pregnancy, in the early acute stages of the infection or when evident active pelvic inflammatory changes, such as salpingitis or pelvic cellulitis, are present."

The wire applicator used in making our applications to the cervical canal sometimes, as we have stated above, slips through the internal os into the uterine cavity. We have recently been impressed by the fact that when this happens the patients often feel pains in their thighs, lower abdomen and back not unlike those complained of by women at the time of their periods who have actually anteflexed uteri. The cervical canal seems quite insensitive until a certain point near the internal os is reached when these pains are suddenly felt. Whether there is a special accumulation of nerve fibers at this point or some other condition that explains this reaction, I do not know, but as I observed it more and more frequently, it has

called to my mind the following impression which I have had for quite a few years, namely, that in dilating the cervices of unmarried women, for dysmenorrhea, with acute anteflexion of the uterus, better results are obtained with the graduated Hegar dilators such as are used for dilating the urethra in cystoscopy, than with the ordinary Goodell dilators. Anyone who has used Hegar dilators in dilating the cervix has probably noticed that they can be passed easily to a certain point, but that they then seem to stick and, finally, when a little more pressure is exerted, pass quickly into the uterine cavity. When Goodell dilators are employed, this condition is not met with, because the shaft of the dilator tapers down abruptly to a narrow point and, when much pressure is used to separate the blades, the instrument is usually withdrawn just a sufficient amount so that the internal os is not dilated. This all seems like a digression from the treatment of endocervicitis, but the point which I wish to bring out is that although it is necessary to apply the 20 per cent mercurochrome to the entire cervical canal, it is better that the applicator should not be passed through the internal os, not because of the danger of causing a salpingitis, but because the instrument going over the tissue at this point often, for a short time at least, causes the patient severe cramp-like pains.

In addition to using 20 per cent mercurochrome in the treatment of gonorrheal endocervicitis with the results already reported, in my private practice I have used this method of treatment in quite a number of cases of non-specific endocervicitis. For those patients whose leukorrhea is due to a laceration of the cervix rather than to an infection of the endocervix, an operation is almost always necessary, and to subject them to a long series of cervical treatments is useless and expensive and, therefore, on these patients, I have performed trachelorrhraphies. However, in that large group of women who complain of a leukerrheal discharge which is not venereal in origin or which is due to injuries at childbirth, in my experience 20 per cent mercurochrome has worked remarkably well. After applications of the drug twice a week for six weeks, the discharge has disappeared in practically all cases.

In virgins, the use of a Kelly cystoscope introduced into the vagina with the patient in the knee-chest position is frequently a help in treating endocervicitis, for by this way we can often apply our drug to the cervix without at the same time rupturing the hymen. In this connection I should like to give briefly the history of a case which I have recently had under my care. The patient, an unmarried girl, twenty-three years of age, came to me complaining of a very severe leukorrheal discharge. This discharge had been present for five years, ever since the patient started to mensturate, and had been so profuse that, although the patient had taken daily douches, she had been compelled during this entire period to wear a perineal pad constantly. Two years before I saw her she had undergone a dilation and curettage of the cervix which had not benefitted her condition. On examination, I found an unruptured hymen, but a very profuse, rather foul leukorrheal discharge. Smears taken from this discharge showed the ordinary vaginal flora, with rather a larger number of staphlococci present than is usually seen. No gonococci were present. The cervix appeared rather injected, but there was no ulceration. The rectal examination showed the internal pelvic organs to be normal. After four weeks' treatment with 20 per cent mercurochrome, the patient was no longer wearing a perineal pad, taking no douches and, on examination, no discharge could be detected.

In infants, we have injected the mercurochrome with an ordinary rubber ear syringe, the baby being placed in the knee-chest position, or, if she is so uncooperative that this cannot be done, pillows are placed under the buttocks so that the fluid will run downward toward the upper portion of the vagina. Infants vary considerably in their sensitiveness to mercurochrome. In some three-year old children, I have been able to use the 20 per cent solution, but in others mercurochrome in this strength has caused so much smarting that I have had to use ten, or even

five per cent. In my private practice, I happen to have had three cases of gonorrheal vaginitis referred me which were complicated by gonorrheal joint conditions. After the vaginitis had cleared up, these improved almost immediately.

It is of some interest that, while during the last three years, we have had quite a large number of very small children infected with gonorrhea admitted to the House of the Good Shepherd we have not, as yet, had a child contract the disease from another infant while in the institution. This may be merely our good luck, but it is quite probable that the first treatment which they get with mercurochrome as soon as they are examined after being admitted to the institution, while not sufficiently strong in itself to cure the disease, greatly lessens the infectivity of the patients for other children. The rapidity with which gonorrheal vaginitis sometimes spreads in hospitals through wards of young female infants is only too well known by those who take care of them.

We feel that it might be worth while to give briefly the histories of a few patients who have been treated at the House of the Good Shepherd with other remedies before the mercurochrome therapy was started, although without running control series of cases we know we are not justified in claiming any superiority of this over other methods used in the treatment of endocervicitis. These cases are not presented to suggest how unsatisfactory other methods of treatment have been, but merely to point out how effective strong solutions of mercurochrome have been in cases that have been markedly resistant to other drugs.

CASE 106. A. W. AGED 17: Treated 14 months with 10 per cent silver nitrate and glycerin tampons; then one month with iodine and tampons; then four months with carbolic acid and tampons. At the end of this time a profuse discharge was still present and gonococci were found in it. At this point mercurochrome was started. No further positive smears were obtained; the patient was discharged in three months, with no leukorrhea. Re-examined at the end of eight months. No discharge present. Smear negative.

CASE 256. M. S. AGED 16: Iodine and tampons for six months. Discharge still profuse. Cauterized with cautery. Discharge slightly less in amount but gonococci still present. Mercurochrome started. No further positive smears. Discharged in four months with no leukorrhea.

CASE 260. L. A. AGED 16: Treated with iodine and glycerine tampons for three months. Carbolic acid and glycerin for three months. Smear positive and discharge profuse. Mercurochrome started. No further positive smears. Discharged in four months without leukorrheal. e-examined at end of eight months. No discharge present. Smear negative.

CASE 262. A. D. AGED 16: Treated three months with iodine and glycerine tampons. Discharge still profuse, although no gonococci were present at the end of three months. Mercurochrome started. No further positive smear. Discharged in two and a half months with no leukorrhea.

CASE 272. E. S. AGED 15: Treated two months with argyrol and tampons. Discharge still profuse and gonococci present in the smear. Mercurochrome started. Smears never again positive. Discharged in four months. Re-examined at end of five months. No discharge present. Smear negative.

CASE 279. M. P. AGED 20: Treated for two months with iodine and glycerine. Smear still positive. Discharge profuse. Mercurochrome started. Smear taken at the end of two weeks positive. No further positive smears after this. Discharged in two and a half months with no leukorrhea.

CASE 282. R. A. AGED 16: Treated two months with iodine and glycerin tampons. Smear still positive and discharge profuse. Mercurochrome started. Smear positive at the end of two weeks. No further positive smear. Discharged in four months. Re-examined at end of two months. No discharge present. Smear negative.

CASE 285. R. S. AGED 16: Treated two months with carbolic acid and glycerin tampons. One month with iodine and tampons. Smear still positive. Mercurochrome started. No further positive smears obtained. Discharged in four and a half months.

CASE 296-*a*. AGED 10. Unruptured hymen: Treated for two months with vaginal instillations of 10 per cent argyrol. Discharge still present and gonococci found in it. Mercurochrome treatment started. No further positive smear. Discharged with no leukorrhea in two and a half months.

CASE 270. S. B. AGED 7: Unruptured hymen. Treated for six months with vaginal instillations of 10 per cent argyrol. Discharge still profuse and gonococci present. Mercurochrome treatment started. No further positive smears. Discharged with no leukorrhea in two and a half months. Reexamined in six months. No discharge present. Smear negative.

In conclusion, we feel that another year's experience with this method of treatment has made us even more confident that it produces a real cure in cases of gonorrheal endocervicitis uncomplicated by salpingitis or Bartholinitis. We feel that infection of Bartholin's glands should be treated by their complete removal. The success which we have had in treating gonorrheal endocervicitis we attribute to two factors: First, that we have applied our drug to the entire endocervix and not, as so often is done even in some of the best clinics in this country, simply painted the vaginal portion of the cervix; second, that we have used such a strong solution of mercurochrome that this drug which is known for its power of penetration, even when used in dilute solutions, has been able to reach the gonococci which bury themselves deep down between the folds of the endocervix. Two distinct advantages of this method of treatment are the simplicity of technique and the minimal danger of a resulting salpingitis. Our second year's cent mercurochrome cures those cases of nongonorrheal endocervicitis, not due to lacerations of the cervix, in a surprisingly short time.

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DISCUSSION.

DR. H. G. STEELE, Bluefield:

I think that Dr. Brady is to be congratulated, for he is bringing to us a very important subject and one which is very much neglected. I hope that those of you who have cases of this kind and do not treat them right will turn them over to someone who does, for I believe this is one of the most neglected parts of medicine. This idea of giving women a little douche and telling them to use it and they will get well is absurd. I hope we have derived a lesson from what Dr. Brady has said today. The surgeons know that 80 per cent of the abdominal operations in women come from neglect of this condition. I believe that you can stop gonorrhea at the internal os, and I believe that a great many cases that you get of

salpingitis and infections up in the abdomen can be stopped before they get that far. If you treat these cases by giving them a little douche and telling them to use it, you are neglecting your duty.

I was very glad to hear Dr. Brady tell of treating these cases with 20 per cent mercurochrome. I use a Luer syringe for eliminating the mucus. In treating children I have used a 5 per cent solution of mercurochrome, which has been very successful in my hands; and I have also used a strong solution of argyrol.

Dr. Brady did not mention injection of Skene's glands, and I should like him to tell us about that. I have done it with excellent results.

I was glad to hear Dr. Brady mention the 5 per cent mercurochrome ointment. That gives very good results.

In 1914 I read an article in which I stated that it is not necessary for the gonococcus to be in the cell to prove that it is gonorrhea.

In the chronic leukorrheas due to endocervicitis I think one of the best treatments of those cases is the Paquelin cautery.

I thank Dr. Brady for bringing this paper to our society. It is an excellent one and contains much that we should remember and take home with us.

DR. BRADY, closing the discussion:

In regard to Skene's glands, of course we do get infections of Skene's glands which will occasionally keep up a chronic gonorrhea. I have not injected them. I have perhaps neglected them, though I have always made a thorough examination whenever I have seen the patients. These cases we have gotten fairly early. I have taken a 20 per cent solution of mercurochrome on a plug of cotton and painted the vicinity of Skene's glands. Whether that has been strong enough to get down into the ducts, or whether we have not had an infection of those glands (which seems unlikely), I do not know.

In children, if you make two or three smears, usually, if the child has gonorrhea, you will find the organisms. In an adult woman it is very difficult to get positive smears. It is quite probable that some of those organisms which we see extracellular are gonococci. I know in an adult woman from one smear it is very difficult to get typical organisms.

What I have been using is a piece of wire not any larger than a hatpin. It is called a Brown applicator and is used by laryngologists. I put cotton on it and insert it up to the internal os. Whatever you use will be just as efficacious as my wire.

There is no question that the Paquelin cautery is good in cases of leukorrhea. One doctor advocated it some years ago, but he has not used it in acute gonorrhea. Most of the obstetricians I know tell me that occasionally they get a case that has an awful time when it comes into labor, because of a cicatrization done years before for leukorrhea. I do not do obstetrics myself, but that is what I hear. So you have to be a little careful about using the cautery. Personally, I think it has a great many advantages. It is a little more of a procedure than treating it this way.

I thank you.

A NEW ANESTHETIC

The *New York Times* reports that a new discovery given the name of 107 will supplant ether and chloroform. This is a bromine preparation which is given by enema. Anesthesia is prompt.

Dr. Ernst Unruh, director of the Rudolph Virchow Hospital, Berlin, reported three hundred successful tests. Although only about five hundred cases have been treated by 107, the doctors are reported as optimistic with respect to the effects of this agent which they claim is devoid of danger to the patient. The claims for 107 were presented at a meeting of the Berlin Medical Society, March 24, 1926. Excitement and vomiting do not follow the administration of the anesthetic. If extended study and experience will demonstrate all that is claimed for 107, another boon to society is available.—*Boston Medical and Surgical Journal.*

PRE-NATAL CARE, PELVIMETRY, (PRACTICABILITY) *

By D. L. HILL, M. D.
Wickham, W. Va.

ALL textbooks on obstetrics treat thoroughly the advantages in recognizing the size and form of the pelvis. Students are taught that practicing obstetrics without the use of the pelvimeter is like practicing internal medicine without the stethoscope. Each instrument is invaluable when properly used.

Pages in our textbooks have been written on the types, sizes and forms of pelves. Emphasis has been laid on the fact that the pelvis must be measured in order to determine whether it is normal in size and shape. Especially has stress been laid upon the inlet. If engagement can take place, but little trouble should be experienced at the outlet; yet authors have not forgotten that the outlet sometimes is the point of obstruction. All of this knowledge is important and useful and should be borne in mind.

These same writers have given but a few sentences on the value of abdominal measurements of the fetus. A few of our leaders in obstetrics have come forward within the last few years, laying stress upon this subject. Its value is immeasurable. Reed, Vogt and Mosher, have all demonstrated this. Each of us realize the futility of measuring the pelvis and then ignoring the size of the fetus except for a guess or an estimation hurriedly made.

It is probably true in most cases that where there is a normal pelvis the fetus will be normal in size, yet there are many instances where difficult delivery has been due to a large fetus rather than a small pelvis. We have been taught that the passage and passenger must be considered. If we consider them both we should have a working knowledge of their relativity.

It is wise for the accoucheur to make a complete general and pelvic examination of every woman when she engages him to take care of her during confinement. In the general examination especial attention is to be given the heart and lungs. He may discover a contracted pelvis, an extra-uterine pregnancy, an ovarian tumor, or other condition which may be removed at this time safely for the patient, while if left for chance discovery, the favorable period may have passed. Further, he must make sure the woman is pregnant to spare himself mortifying surprises. The woman will not object to the examination if it's necessity is explained. A card or history sheet should be filled out at this first visit, which should contain a complete medical history of the patient. This may bear on the obstetric side of the case. The urinalyses, the results of examinations, systolic and diastolic blood pressure, and items of interest during the course of pregnancy, are recorded on the card. Every week at a time set apart for the purpose, the physician looks over these cards and gets in touch with the individual patients. If, for example, the record shows that no urinalysis has been made for a long time, the patient should be reminded of such a necessity.

When the call to a labor comes, the card should be taken to the case. The keeping of accurate and complete records is a duty which the physician owes his patient, his profession and himself.

Some time during the eighth month the patient should be thoroughly examined. This examination is best made in a maternity on the delivery bed, with the patient undressed. It can be conducted at the patient's home or even at the physician's office, though not as thoroughly. While the greatest attention is paid to the pelvis, the heart and lungs should be studied, with a view to discover any de-

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fects that might jeopardize the pregnancy or the patient in labor. The size and consistence of the breasts and the configuration of the nipples are studied with a view of determining the woman's ability and fitness for lactation. Far from objection, the patient will approve of such care and thoroughness in the study of her case, and it will give her increased confidence in her accoucher. After the chest, including the breasts, has been examined and the information noted on the history sheet or card, the patient is arranged lengthwise on the bed or table, the abdomen bared, the chest and extremities being appropriately draped with sheets, and all the information that may be gained by abdominal examination is sought and recorded. One notes the size, shape, and consistence of the uterus, the position and size of the fetus, its heart-tones, and the presence of abdominal tumors besides the uterus. The external pelvic measurements are now taken, using a pelvimeter. The following are the most useful:

1. The distance between the spines of the ilia, always taking the outer lip—26cm.
2. The distance between the crests of the ilia, taking the outer lip—29cm.
3. Between the great trochanters—31cm.
4. From the depression under the last lumbar spine to the anterior surface of the pubis—20cm.
5. The circumference of the pelvis—90 cm.
6. The obliques, from the right posterior superior spine of the ilium to the left antérior superior—22cm., and the corresponding oblique of the other side—21½.

I take the obliques only in cases where there is scoliosis and other evidence of pelvic asymmetry. Baudelocque's diameter is best obtained when the patient is erect, but one can get it with the patient lying on the side, with the upper leg straight, the lower drawn well up against the belly. The posterior branch of the pelvimeter is placed in the dimple under the last lumbar spine. This point is one inch above a line drawn between the two posterior superior spines. On the posterior aspect of the pelvis, in well-formed women, is a diamond shape depression formed by the dimples of the posterior superior spines of the ilia, the lines formed by the gluteal muscles and the groove at the end of the spine. It is called the rhomboid of Michaelis. The point for the calipers is near the apex of the rhomboid. Variations in the shape and size of this landmark give us valuable information in deformed pelves. Anteriorly, the knob of the pelvimeter comes to rest on the most prominent portion of the bony pubis. It is wise to take Baudelocque's diameter three times and use the average of the three measurements.

The circumference is taken with the tape lying between the crests of the ilia and the trochanters on each side, and in a plane perpendicular to the long axis of the body. Naturally, in fat women the circumference does not give valuable information. Indeed, the value of the external measurements is but relative. Only marked deviations from the normal indicate a contraction of the pelvis, and one must rely on the internal examination for more positive information.

Baudelocque believed that, by deducting 8 cm. from the external conjugate, the length of the vera could be obtained. This is not true, because the thickeness of the bones and their conformation, produce differences of even 5½ cm. If a woman has a conjugata externa of less than 18 cm., the probabilities are strong that the inlet is also narrowed.

For the same reason the other measurements are unreliable. I have a pelvis with an intercristous diameter of 21 cm. and an internal transverse of 13½ cm. The relation between the interspinous and intercristous diameters is of more importance, for when the interspinous diameter is equal to, or greater than, the intercristous, we suspect a flat pelvis. Insist on internal pelvimetry in all cases, excepting only those women who have had one or more large children without the slightest difficulty.

The internal measurements are taken with the hand and a special internal pelvimeter. These are essential:

1. The conjugata diagonals—12½cm.
2. The distance between the spines of the ischia—11cm.

3. The distance between the tuberosities of the ischia—11cm.

4. The distance from the end of the sacrum to the ligamentum arcuatum pubis—11½cm.

Of the scores of instrumental methods of measuring the conjugata vera directly, since the first by the elder Stein (1772) up to the latest by Bilicky (1909), not one has proved practical. Their application is too painful and difficult. We still obtain our best information by measuring the conjugata diagonalis and deducting from it the length of the C.V. Even though we can measure the height of the pubis, and thus know the length of two sides of the triangle, it is impossible to learn the arc of any of the angles of the triangle subtended by the symphsis. Trigonometry, therefore, cannot help here—we must depend on estimates. Examination of large numbers of pelves shows that if one deducts 1½ cm. from the length of the C.D., one obtains the length of the C.V. If the pubis is very high, 6 cm. or more, one must deduct 2 or 2½ cm. If the upper border of the pubis inclines more than usual toward the sacrum or is very thick, or if there is an exostosis of the posterior surface of the symphysis, both of which last occur in rachitic pelves, 2 or even 3 cm. may have to be deducted from the length of the C.D.

The transverse diameter of the pelvis decreases from above downward. At the level of the inlet it measures 12 to 13 cm.; in the region of the spines, 11 cm.; anterior to the spines, 11½ to 12 cm.; at the outlet, between the tuberosities 11 cm. In practice, it is only exceptionally possible to measure the transverse of the inlet directly. When labor has been in progress for a time the vagina becomes so soft and distensible that one can spread the branches of the internal pelvimeter, until they touch both sides of the pelvis, enabling one to read off the measurements on the scale with mathematical accuracy. Late in pregnancy it is easy with this instrument to measure the distance between the spines of the ischia. The distance between the tuberosities is not so easily gotten, because of the thick padding of fat over these bones. One must add 1 to 2 cm. to the measurement obtained with the pelvimeter. While the external measurements give only equivocal information, considerable dependence may be placed on internal measuration and this will increase with added experience.

Technic of the Internal Examination.

During the early part of the eighth month is the most favorable time for pelvic mensuration in general practice. During labor one may have the advantage of anesthesia. The patient must lie across the bed or on a table, with the hips hanging over the edge, to enable the examiner to sink his elbow. Her person must be draped with a sheet, but the genitalia are to be exposed.

For examination, at this period, the genitals need not be shaved, but they should be washed with water and soap, following this with a liberal use of antiseptic solution, 1 : 1500 bichlorid or 1 per cent lysol. Rubber gloves should be worn as a precaution against syphilitic infection, for the sake of personal cleanliness to preserve the skin from the corrosive action of antiseptics, and to render the examination less painful to the patient. The internal pelvimeter is sterilized by boiling in a 1 per cent soda or borax solution.

On inspecting the vulva, one will note any suspicious discharge, abscess, varicose veins, the extent of previous lacerations, etc., after which two fingers are inserted between the widely separated labia, deeply into the vagina. It is well to study, in each case, the topography of the levator ani, which can be easily done by pressing the fingers down on either side of the vagina. In a primipara the muscle is broad, sling-like, and on contraction powerfully crowds the fingers against the pubic arch. In a multipara the introitus is open, the levator ani is represented by two thick pillars at the sides of the vagina, which upon contracting, do not crowd the fingers so tightly against the pubis. The condition of the vagina is noted. If there is a granular condition of the mucous membrane which might suggest gonorrhea, a smear should be taken with a view of preventing ophthalmia neonatorum and sepsis postpartum.

Next, the cervix is studied to learn whether it is long, tapir-nose-like, or short and broad; whether patulous, as in multi-

parae, or closed; whether normal, smooth, and soft, or diseased, thick, knobby, catarrhally inflamed, or eroded.

Then the lower part of the uterus is palpated and the presence of the head determined, at the same time discovering any tumor which may block its entrance into the pelvis. The fingers now pass around the bony walls of the pelvis to obtain a mind picture of the capacity and configuration of the excavation. It requires years of practice for the accoucheur to be able to form correct mind pictures of these things, but they must be learned. The height of the pubis, its inclination into the inlet, the presence of an exostosis on its posterior surface, the curve of the rami pubis, the height of the sacrum, the shape of the sacrum, the movability and shape of the coccyx are determined in the order mentioned.

Next the bispinous diameter is taken with the pelvimeter. The instrument is closed and passed, with the scale upward along the finger until it has passed the grip of the levator ani, then the blades are spread until one knob comes to rest on, or just in front of, the spine of the ischium. Being assured that the patient's hips are horizontal, the blades are spread in the horizontal plane until they are arrested by the bony walls of the pelvis, and at this instant the amount of separation is read off the scale. This measurement will cause little pain if the vagina is soft and dilatable (which is usual at this time), and if the examiner proceeds slowly and gently. If the vagina is diseased, it is more tender. Under no circumstances may force be used, as a tear of the vagina might occur. If the blades easily spread to 10 cm. and there seems to be room beyond, it is not necessary to insist on the full measurement. In a contracted pelvis it is easier to obtain the distance. To take the sacropubic diameter from the inside is not always possible without anesthesia, and less often in primiparae in whom the perineum rises high. One knob is steadied by the outside hand against the ligamentum arcuatum at the side of the clitoris, while the other knob is pressed against the end of the sacrum, being guided into place by the fingers in the vagina. One may measure the sacropubic diameter, with the fingers in the same manner as one obtains the diagonal conjugate.

Now the instrument is removed and the examiner takes the conjugata diagonalis. Sinking the elbow and resting it against the knee, the examiner gently, but with force, presses the middle finger-tip against the promontory of the sacrum. It may be necessary to keep up a steady pressure against the perineum for several minutes before the rigid muscles relax. As soon as the tip of the promontory is felt, the hand is raised against the ligamentum arcuatum. A bit of cotton carried on the index of the other hand is now pushed along the index of the examining hand until it rests at the point where the examining hand is touched by the ligamentum arcuatum. After making sure that the middle finger-tip was actually resting on the promontory at the time the bit of cotton reached the under edge of the pubis, the cotton is carefully steadied in its place by the outside hand while the internal hand is removed from the vagina. With a tape measure or any pelvimeter one now obtains the length of the conjugata diagonalis. After guessing at the inclination of the pubis and allowing for its height, one deducts 1½ or 2 more cm., and thus approximates the length of the C. V.

Several methods may be practiced in obtaining the bituberal or bi-ischiatic diameter. Schroder made marks on the skin of the buttocks to show the location of the inner surface of the tuberosities and measured the separation of the marks. An assistant may measure the distance between the two thumbs so placed on the tubers that the finger-nails represent their inner surfaces. Two, three, four or five knuckles of the hand may be pressed in between the bones, and the distance across them later measured with a tape. Williams' pelvimeter may be used. The closed knobs are inserted between the bones and separated until they are arrested. It is necessary to press the tissues well against the bone and to add 1 to 1½ cm. to the reading for the thickness of the fat.

The sacropubic diameter may also be taken from the outside by Breisky's method. One

knob of the pelvimeter rests under the arch of the pubis, the other is pressed against the sacrococcygeal joint, 1 cm. being deducted from the reading to obtain the result.

Finally, the examiner carefully palpates the accessible bony portions of the pelvis. The fingers of each hand are laid on the descending rami of the pubis and the acuteness of the angle of the arch thus easily determined.

Thickness of the bones, asymmetry of the two sides, a beak shaped pubis (osteomalacia, rickets), are thus discovered. As the last maneuver, the hand is laid flat on the sacrum, the middle finger pressed firmly into the genital crease, to conform to the curve of the bone. On removing the fixed hand, the external configuration of sacrum can be seen at a glance.

A study of the general make up of the gravida will tell us a great deal. Tall, muscular women seldom have contracted pelves, and, if they do, the type is usually masculine. Short, petite women have generally contracted pelves. A woman that limps, or is hunchbacked, or has crooked legs, may have a distorted pelvis. Evidences of rickets should always be sought in the rachitic rosary, the square, large head, enlargement of the epiphyses, bow-legs, curvature of the spine, etc.

Much more could be written on pelvic mensuration, but little that is practical. Roentgen photography (Budin) has failed to give accurate results, as far as mensuration is concerned, but it does give some idea of the shape of the pelvic cavity, especially the recent stereoscopic methods. Cliseometry is a method, devised by Neuman and Ehrenfost, for taking the inclination of the pelvis. The cliseometer invented by them gives fairly satisfactory readings, but the information is of little practical value. They also devised an instrument built on the lines of the ordinary pantograph, with a spirit-level for obtaining accurate outlines of the entire pelvic parietes. While the results are usable, the application of the instrument is quite painful and complicated, precluding its employment as a routine.

All this information is to be carefully entered on the history sheet or card. If the physician conducts his examination systematically, he will not overlook any points and have the disagreeable necessity of putting the patient back on the table. On discovering anything unusual in the pelvis, soft part, or child, the examination takes on an extra interest, and special attention will have to be directed to the part. A careful consideration of all the information obtained enables the accoucheur to make his diagnosis of the case, the prognosis of the labor, and any recommendation for treatment at this time, all of which are noted on the card.

Too much emphasis cannot be laid on the importance of making a careful pelvic mensuration in pregnancy. It may discover a contracted pelvis and permit us to induce labor while the child is small, or prepare for cesarean section or other operative delivery at term. It will explain many anomalies in the mechanism of labor, and it will save many mothers' and children's lives.

NUTRITION CLASS SAVES CHILDREN FROM CRIME

A 9 year old boy was so undernourished that he refused to study, was disobedient and rebellious and fought with teacher and pupils at school. He was so hungry that he stole pennies from his schoolmates to buy a ham sandwich and a can of beans. This potential young criminal was transformed into a normal, healthy child, eager to study and to play with the rest of his class.

The story of how a nutrition campaign in one North Carolina city helped 9 year old Jason and thousands like him is told by L. B. McBrayer and Theresa Dansdill in *Hygeia*.

URINARY SYMPTOMS

It is unwise to account for marked urinary symptoms in women by the presence of a prolapse of the urethra or even a caruncle unless a careful cystoscopic examination has been negative; often the urethral condition is simply symptomatic of serious bladder disease.—Dr. A. L. Chute (*Bost. Med. and Surg. Jour.*)

NORMAL LABOR *

By M. S. DOAK, M. D.
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IN taking up this subject I will not attempt to go deeply into each phase of labor and this paper will in effect be more of an outline of normal labor and of the physician's duties during that time, including the things he should do and some of the things he should not do.

The condition under which the most of us here have to work in obstetrical cases compels us to deviate from the proper course of procedure but we should do our best to care for the best interests of our patients under the existing circumstances.

Primarily, labor is that natural process by which the female expels from her uterus and vagina the ovum at its period of full maturity, which is reached, on the average, two hundred and eighty days after the first day of the last menstruation. (Hirst).

The process is divided into three stages.

1. The expansion of the birth canal or from the beginning of labor until there is full dilitation of the cervix.
2. The expulsion of the fetus.
3. The expulsion of the placenta.

The physician usually knows, prior to labor, the approximate date of delivery and he should hold himself in readiness to respond. An examination of the prospective mother should be made four to six weeks before term, to determine the measurements of the pelvis, the presentation and position of the fetus and the general condition of the mother. When the physician is called his first duty is the diagnosis of pregnancy and of the fact that labor has actually begun. Concluding that the diagnosis of labor is made, some of the signs of labor are:

1. Recurrent pains of characteristic duration, situation and nature.
2. Blood tinged mucus showing at the vagina.
3. Dilatation of the os.
4. The subsidence of the uterine tumor.

The course then becomes one of watchful care, waiting and expectancy and observation of the efforts of nature. Attempts to hasten matters by bidding the patient bear down with each pain, dilatation of the cervix manually or by bagging, and the giving of pituitrin or ergot are condemned. Attention should be paid to the diet, bowels, bladder, general condition of the patient and to the relief of pain if this is too severe. Morphine and scopolamin are the best drugs for the relief of pain early in this stage. Asepsis and antisepsis should be rigidly maintained throughout. The patient may be allowed up and about during this stage. A rectal examination should be made after the membranes rupture to determine the cervical dilatation and the position and presentation of the fetus. The fetal heart should be examined by auscultation.

The beginning of the second stage of labor can usually be determined by, the rectal examination, particularly sharp bearing down pains, rupture of the membranes and frequently the patient will express a desire to evacuate her bowels and bladder.

The main points to be considered now are asepsis and antisepsis, anesthesia, protection of the life of the child and preservation of the perineum. Sterility should be maintained so far as the bed and drapings are concerned. The inner aspects of the thighs, the perineum, the labia and the nearby parts of the patient should be cleansed thoroughly. She should be kept in bed. The physician should attend to his personal antisepsis as regards his hands, gloves, gown, etc.

* Read before the Raleigh County Medical Society at Beckley, February 24, 1927.

Vaginal examination should not be done unless abnormality is suspected.

Obstetrical anesthesia with ether or chloroform may well be resorted to in this stage. A surgical state of anesthesia should not be used in a normal labor. Morphine should not be given less than three hours prior to delivery because of danger to the child.

Frequent ausculation of the fetal heart during the second stage is necessary. Continued watch should be kept for the first signs of asphyxia of the unborn child and for symptoms of the abruption of the placenta.

There is always injury to the perineum during the second stage of labor. The importance of this injury however varies greatly depending on the extent of the traumatism. The levator ani muscle and the perineum itself are the two to which our best efforts should be directed toward prevention of laceration. The usual causes of laceration are—disproportion between the head and the vulva, too rapid expulsion of the fetus, abnormalities in the mechanism of labor, or a narrow pubic arch.

As the head appears at the vulva the physician should be prepared to restrain its progress. The best methods for protection of the perineum are—slow delivery and the delivery of the head in forced flexion. This should be done by allowing the head to extend the perineum with each pain but by holding it back enough to prevent too rapid distention. It is allowed to descend until its greatest periphery stands in the distended vulva. Then the mother should be cautioned against too forceful use of the pains and the head should be delivered between pains. However we must not be too zealous in restraining the head as the skull of the infant may be fractured or if the uterine and abdominal efforts of the mother are too great the uterus may be ruptured.

The use of the anesthetic is important in this stage.

After the delivery of the head, it is noted as to whether the cord is circling the infant's neck or not. If it is and there is constriction enough to be dangerous to the child, the cord should be slipped over the head if possible and if not it should be cut and the ends ligated.

The tendency to hurry the delivery is wrong. When the pains are resumed after a short interval the head is first depressed to aid the delivery of the anterior shoulder from under the symphisis pubis and then in turn it is elevated to bring the posterior shoulder over the perineum. After the shoulders are delivered the rest of the body is too small to present effective resistance and it is expelled.

The mucus should be removed from the air passages of the child at once. When the pulsations of the cord have perceptibly weakened or stopped, the cord should be cut and both ends ligated. The eyes should be treated as legally required.

The importance of the third stage of labor is too seldom realized. The patient's freedom from post-partum hemorrhage, her expulsion of the secundines complete, her convalescence and her health later in life depend on the proper conduct of this stage of labor. A hand lightly placed on the abdomen should follow down the receding uterus and watch should be kept for hemorrhage from the vulva. Internal stimulation should consist of a dram dose of the fluid extract of ergot. No palpation of the fundus and no tension on the cord at this time. In ten to thirty minutes the placenta will have been expelled from the uterus into the dilated lower uterine segment and the upper vagina. This is indicated by the strong uterine contractions, by the rising up of the uterus in the abdomen while a soft, boggy mass appears below. The cord as a rule becomes limp and advances three or four inches further from the vulva. At this time if the patient can't expel the placenta by bearing down the uterus is grasped by the whole hand with the thumb in front and without squeezing it is gently pushed down onto the placenta causing its expulsion. The membranes should be allowed to come out of their own weight. A brisk massage for the uterus is now indicated. The placenta should be minutely and systematically examined to make certain that there are no fragments retained. A thorough

examination of the vaginal outlet for injuries, and of the child for deformities and injury are now made. The physician should remain at the house for at least one hour after the delivery of the placenta to see that 1. The uterus is in firm tonus and good position; 2. There is no internal or external hemorrhage; 3. That both the child and the

THE TREATMENT OF MALIGNANCIES*

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IN treating malignancy, what factors are of importance in the conquest of the disease? Logically, in the treatment of this as well as in the treatment of any disease, it is vital to destroy the deleterious elements of the disease. These may be destroyed either directly or indirectly.

I. Directly Destructive: (a) Eradication and removal with (1) cautery excision, (2) fulguration, (3) knife, (4) radiation (a) radium (b) X-ray, (5) caustics, (6) digestion by digestants.

II. Indirectly Destructive: (a) Reduction of nourishment to the malignant tissues which is produced by (1) reduction of the blood supply to the tumor by arterial compression (ligation); (b) introduction into the system of substances specifically acting upon cancer cells. Weichelbaum, noting that the nuclear elements of tumor cells took acid stains in greater quantity than did other cells, conceived the idea that if a cell poison were combined with an active acid stain, greater quantities would be absorbed by the malignant cells than by normal cells and thus would have a lessened resistance and perhaps would even be destructive. For his purpose he combined arsenic and fuchsin. According to some enthusiasts who have favored this method it had value. However, it has fallen justly or unjustly into disrepute. Colloids of the heavy metals such as copper, lead, gold, etc., have also been used but with no startling effect.

III. Introduction into the body of (1) Cancer cells in the form of emulsions. This is supposed to be of special value to prevent a recurrence, while (2) extracts of tumor tissues are supposed to be of curative value. Both of these preparations are more potent when the tumor cells are of heterogenous origin; (3) sera from supposed cancer organisms are of no value.

There is no doubt that the best way to treat all malignancies, wherever found, is by total and complete excision, this being best performed by the cautery knife. This knife is kept at white heat and at this temperature it cuts through the tissue with the ease of a scalpel. It has the advantage over a scalpel in that it immediately sears the tissue spaces, so that cancer cells cannot enter and propagate. It has also the advantage that the tissues adjacent to the incision are destroyed to a depth of about one quarter of an inch. In this heavy, boggy, ill-nourished tissue, bacteria do not thrive, so that when, in a few days after cautery excision, the necrotic mantelling layer disappears, a granulating surface, highly resistant, is exposed. Many times I have hesitated to remove malignant growths because of the fear of septic involvement of adjacent tissues from the foul, infected, sloughing masses composing the growth. However, when the cautery was used for such excision, even when the line of cleavage was close to the inflamed and necrotic tissue, I have yet to see sepsis engrafted upon the burden which the patient bears. The so-called radio knife is of value in removing malignant growths. It has the advantage in that it does not destroy the tissue but makes a clean-cut incision which may heal with primary union.

It has the disadvantage that it does not sear off the blood vessels; a combination of cautery knife and fulgurating instrument is

* Read before the Westmoreland and Washington Counties' Medical Societies (Pennsylvania).

the best method. Fulguration alone may be used when the growth is small and is superficial and may also be used on the exposed surface after excision by knife.

After the cautery excision the lack of secondary involvement of the skin margin as well as the absence of septic complications may be explained by the wide excision which is carried out. This wide excision takes care of the local propagation but does not influence the metastasis in the adjacent lymph glands. In order to effectively block the onward progress of the disease, the removal of the adjacent lymph gland is urgently demanded. This lymph gland removal with excision of the layer of the fascia mothering the lymphatic vessels is in every instance an essential method of treatment. When the primary focus is removed and the adjacent lymph nodes are excised, the few malignant cells nesting in the lymph pathways will be destroyed by the defensive mechanism of the host, either before or after artificial reduction of the cancer cells viability from radiation by radium or X-ray.

Preliminary to excision or to radiation we believe that a most valuable factor, nay almost essential factor, either for perfect excision or effective radiation is curtailment of the blood supply to the tumor. This is most thoroughly accomplished by the ligation of the blood supply. This curtailment must be almost total, the only blood permitted to enter the affected part being that which comes from a retrograde collateral circulation. When this restriction of circulation is induced, it is noticed that the tumor decreased in size. This decrease is perfectly astonishing and may be accounted for, because of diminution in tissue fluids synchronously, the individual tumor cells as well as those of the healthy tissues also diminish in size because of the dehydration. A part of the decrease possibly also comes from restriction of inflammatory exudate and capillary dilatation. The boggy appearance of the base and edges of a malignant ulcer changes to a dull grayish dry character. The excessive weeping of the ulcerating surface lessens and pus and other products of inflammation decrease. For these reasons, the pain which nearly always is a most troublesome symptom in malignancies is lessened and may almost disappear. Whether the restriction of blood supply with consequent reduction in the amount of nourishment to the cells of the involved area is of any benefit in restricting the growth of the rapidly developing and reproducing cells of cancer tissue is problematical. There is a possibility that, because of the vigorous growth of these cells, they may aggrandize to themselves the major share of even the little nourishment which comes through to the affected region. However, since the malignant cells are weaker and are not as resistant as the normal tissue cells, it is most reasonable to believe that these cells, which by an extensive amount of nourishment may be influenced and caused to deteriorate, degenerate and possibly either die or have their activities curtailed by nutritional changes which would not otherwise affect the healthy cells of the part. This seems to be a potent reason for restriction of the blood supply. A very great and a most important motive, however, is that restriction of the blood supply renders operative removal practically without danger to the patient. In all extensive carcinomatous resections, the great danger to the patient is from bleeding. Loss of blood can be ill supported by those whose blood stream has already been contaminated by the poison emanating from the cancer. As a rule they are suffering from anemia, and furthermore, from a peculiar derangement of the blood as yet undefined which renders them less resistant than ordinary individuals to extensive operative procedures.

After curtailment of the blood supply, septic absorption from the lesion is less and the patient regains appetite and spirit and may improve surprisingly. However, I would like to again emphasize that the chief virtue of the lessening of nutrition is that it reduces the vital resistance of the cells in the occluded area. As malignant cells are more susceptible to nutritional variations than are normal tissue cells, they are more sensitive to reduced nutrition, so that when their nutrition is reduced, they respond with a lessened resistance against destructive agencies. Therefore, radiation is

more affective after ligation of the supplying blood vessels than when the circulation is permitted to remain normal.

The result of radiation after curtailment of the blood supply is particularly emphasized in several of our patients, who before ligation were not influenced by active radium and X-ray treatment, but who, after blood vessel ligation, responded remarkably to radio-therapy with a marked recession of the growth.

In what manner the tissues may be influenced by radiation, either X-ray or radium when the blood supply to the radiated part has been reduced has not as yet been properly studied. However, here again, since new cells are more easily influenced by the X-ray than are the older, more hardy and more resistant cells, we may conclude that the reduction of the blood supply to these cells would further reduce their resistance to destructive influences. For this reason, also, it would seem that a lesser amount of radiation would be effective than in areas in which the blood supply was not reduced. This seems to be borne out in practice for in the case of Mr. C., in whom it is noticed that radiation has a very, very marked influence after the blood supply has been curtailed. This, in contra-distinction to the fact that prior to this radiation and radium apparently had no influence on the growth.

Since, in the case mentioned above. there was a marked recession in size after radiation, it might be asked why was not radiotherapy always used instead of excision. The answer is that we believe excision is sure while radio-therapy at best is uncertain and we ask ourselves the question—why trade a certainty for a possibility? After curtailment of the blood supply it is our belief that radio-therapy should be used and this is our second stage in the treatment of major malignancies, unless removal of adjacent gland area with intervening fascia is undertaken when radio-therapy in the form of high voltage X-ray should be given over a wide surrounding area before any surgical intervention.

The third stage is total excision by endothermy or where this is not available by the actual cautery of the tumor with a wide margin of apparently healthy tissue. Bone, muscle, nerve vessels, etc., are all ruthlessly sacrificed in this excision. In some instances diathermic destruction may be used instead of the actual cautery and if the growth is small coagulation may be applied.

The fourth stage is the after treatment. It requires about ten days for the necrotic tissue, the result of heat coagulation, to separate from the underlying structures. By this time the granulations have grown to fair size so that toxic absorption from the tumor is reduced and fever is lower and the pulse rate becomes less. Appetite improves, so that the patient may look and feel and act much nearer to normal.

An effect, valuable and gratifying is the acquirement of a better mental poise by the patient. The depressed and disturbing distress of the patient is transformed into cheerfulness and hope. To bring about such a mental state alone justifies the procedure. At this time, further radiation of the wound and surrounding parts is given.

During all this time the patient is receiving constitutional treatment which I consider to be of equal if not greater importance than the local treatment. This consists of: (1) Ultra-violet light; cod liver oil and milk and cheese. These are to increase vitamine A which is deficient. (2) Ingestion of alkaline water. Sodium bicarbonate to keep up alkalinity of blood, which is reduced. (3) Giving of calcium in the form of calcium phosphate by mouth or afenil, ampules I, weekly intravenously. (4) Parathyroid glandular extract, gr. 1/20 to 1/10 three times daily to mobilize the calcium. (5) Washing out of colon by high enemata twice daily.

The fifth stage in the treatment of an extensive tumor malignancy is the reconstructive period, whereby flaps are slid over to cover defects and cosmetic blemishes. This is accomplished by free or pedicle grafts by the engrafting into cavities of fat either free or attached by pedicles. Where the possibility of poor or inadequate nour-

ishment is conceived, pediculate flaps are always used. Where it is impossible to cover defects by plastic methods, prosthetic apparati may be devised—glasses may be used to cover eyeless sockets; dental appliances are used to fill out defects in the maxilla and cheek. Surgeon, dentist and artist are all essential.

OUR OBLIGATION TO THE CHILDREN OF OUR COMMUNITIES*

By A. A. SHAWKEY, M. D.
Charleston, W. Va.

NO LECTURE or address has pleased or impressed me more or had a more lasting influence upon my life than that of a grand old man of the medical profession, in a little after dinner speech, a few years ago, in which he made a plea for idealism in medicine. He urged that we forget the money consideration in our work, and devote our whole minds to attaining the highest possible degree of professional proficiency, assuring us that if we did, the financial end would take care of itself and of us, in due time.

He was thinking along the line that "If you produce a better mouse trap than any other, the world will make a beaten path to your door," and he was right.

I realize how almost impossible this is for many men, for I began the practice of medicine with a school debt which in terms of today's valuations would amount to about $8,000.00, and I had not a dollar's worth of resources. Still I am convinced that it would have been much better had I followed the advice of this silver haired colleague; and it could have been done.

If those of our profession, and they are all too many, who spend much time in scheming, planning, conniving, and what is worse, splitting fees and so forth, to get volume of work, would spend that time in ethical and professional betterment they would get the work, and the money and with it get honor; and would help to rebuild our profession to the old-time standard of honor, rather than to raze it from the pedestal upon which it was placed by our predecessors.

Soranus of Ephesus was probably the greatest pediatrician of antiquity.

In his teachings in Rome during the reign of Trajan, between the years 110 and 130 A. D. he promulgated some very modern rules for the care of the mother and of the child. He commended the wisdom of breast feeding and the use of the wet nurse, gave methods for increasing the supply of breast milk by diet and exercise; condemned the use of proprietary foods or "foreign" foods as he called them, and the habit of "swinging" and churning the infant after feeding; and put forth many more very interesting and valuable teachings.

No advance was made over his teachings for nearly 1800 years.

I give this as a basis for the statement that in no other branch of medical science is the ignorance so profound, the superstitions and traditions of antiquity so deeply entrenched in the minds and practices of both the laity and the profession as in child hygiene and pediatrics.

Perhaps you may not agree with that statement, or with the intimation above, that the medical profession has lost any of its old-time honor or glory. Well, let us see.

As a concrete example, the influence that permitted the passage of the chiropractic bill in our last legislature was directly due to the unethical, back-biting practices between some of our colleagues which practices were known to the disgust of some of the members of the legislative bodies.

How about hospital lists where the services of whole groups of us are sold, for a dollar a month, to persons whom we do not know and many of whom are worth two

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* Read before the Mercer Medical Society at Bluefield, December 22, 1926.

dollars to our one—the worst kind of unethical, bargain counter price cutting.

As a good example of which, let me cite a case in which, over a period of eight weeks I did at least $200.00 worth of work for which I received not a single penny nor even a "thank you"; though the people were able to have and did have an entire sun parlor in the hospital for the whole period of the infant's illness.

This is but a single example of many, and most of the men in the larger centers are doing the same thing. I have about quit.

We are doing ourselves and perhaps the public at large, a great deal more harm than all the unethical cults combined.

Then the free clinics. Possibly a good thing when really confined to the worthy poor, for I very much doubt if they are ever so restricted.

We pay heavy taxes to support a needless number of such clinics where come many people of more means than honor, and often of more means than have we who are doing their work for nothing, when they should be paying an honest fee to an honest doctor for services more efficient than will be given for nothing. We rarely get much for nothing.

One has reason to wonder when so-called charity patients drive up in Fords and automobiles.

A patron told me in disgust of a woman who with her husband own their home and a Packard car, who when asked why she took her baby to the Salvation Army Clinic for treatment, replied "We wanted Dr. Shawkey to treat the baby but if we paid him for his services we could not buy the Packard."

That there may be no seeming reflection upon the Salvation Army let me hasten to say that if I treated this patient I did it unknowingly to both me and the Salvation Army officers. Had I treated this case knowingly it would have been both unethical and dishonorable.

The Salvation Army is very careful to admit to the clinic none who are not justified in asking free treatment.

Since I am sure that I do my full share of charity work, I feel that I may speak freely upon the subject, and it is my firm conviction that there should be *absolutely no* free charity medical or surgical work.

There is about one physician for each one thousand citizens. Doctors pay the same rate of taxation as other citizens, and some special taxes. Why then should each doctor bear the whole burden of the medical and surgical charity for a thousand people? Why should not all the financially able ones of the thousand bear an equal share of the burden of medical and surgical charity through a special levy of taxes for that purpose, which would be the only fair and equitable method of handling the situation.

As touching the matter of ethics and honor,—How about superficial examinations, snap-shot diagnoses and careless treatment for small fees?

Is it either honest, ethical or honorable to do less than one's very best when the health or life of an individual is at stake? Or to call in consultation any but the very best skill available for the individual case, just because some one else happens to be in our group or clique? But enough of this.

The Bible tells of a man who builded his house upon a rock, and winds blew and the storms came and beat against that house, but it fell not, because it was built upon a rock.

The Bible also tells about another man who builded his house upon the sand, and the storms came and the winds blew and beat against that house and it fell, because it was built upon the sand.

Foundation is everything.

In the recent war our hearts beat high with pride when our choice young men marched off to the colors. Then came surprise and chagrin when 35 per cent of them, two million in all, were found unfit for the vigorous, manly life of the army.

Dr. Harvey Wiley, a man of authority, has expressed the opinion that three-fourths of these, a million and a half, all told, were physically unfit to be soldiers because they had not been properly fed in infancy and early childhood.

Another authority tells us that the evils of improper feeding in infancy are not all apparent until after thirty years of age.

The latest testimony against the evils of improper care and feeding in infancy is that of Sir Arbuthnot Lane, the great English surgeon, who now comes forth with the statement that poor feeding in infancy has made the legs of the English girls ugly. He refers to bow legs and knock knees due to rickets.

My experience confirms me in the belief that the statements of these men are true.

One can almost always tell, very quickly, by the results of treatment in any individual case whether or not the child has been properly fed.

Ninety or ninety-five per cent of all the children that become very ill or that die from any cause whatever, have been improperly fed. Check this up in your own experience and prove it.

I recently had my secretary to go over the first one thousand case histories in my files to see what number were ill wholly or in part because of errors in diet and feeding. The result showed that 766, or 76.6 per cent were ill from such cause.

How many of us can tell the composition of sweetened condensed milk, than which there is no greater enemy or destroyer of innocent babies?

How many of us remember that Mellin's Food is only sugar, with two and a half per cent of potassium bicarbonate? Yes. good sugar if used as such, but only sugar.

How many of us tell the mothers to get a can of Eagle Brand milk or a box of Nestles food, or a can of S. M. A. and prepare it according to the directions on the package?

Is that because we think it is the best thing available for the baby, or is it because we are not just sure how to write a formula of cow's milk, water and sugar, and do not take the trouble to assure ourselves on that point? Such formula writing is very simple and can be learned by any physician in an hour's time.

As bearing upon this point let me quote from a paper read at the last meeting of the Southern Medical Association, the author of which I do not recall: "The average general practitioner has an entirely erroneous and exaggerated idea of the difficulties of infant feeding, and too often he follows the teachings of some suave detail man who assures him that he has a preparation so exactly resembling breast milk that it would put any self-respecting mother to shame who attempted to turn out a product as good; and he leaves a sample in the physician's office with so-called complete directions as to its use. How much easier it is for even the physician to follow the directions on the can, than to get down his books and attempt to relearn a subject which was taught him when he was a medical student, the percentage method of feeding, which he remembers to have been a cross between a post-graduate course in organic chemistry and a course in higher mathematics. In other words the teaching of infant feeding in schools and in text books is remarkable for its complexity rather than for its simplicity. A large proportion of the physicians attending this section are general practitioners, and it is my desire to point out in this address that each of them is equipped to feed the normal baby provided he interests himself in the subject and uses a fair degree of common sense in his formula."

All authorities, except perhaps some who are financially interested in some proprietary food, are now agreed as to the wisdom of using the simplest formulae in infant feeding, and that no substitute food has yet been concocted that equals the simple formulae of cow's milk, water and sugar.

At a meeting of the Chicago Pediatric Society after a program on the subject of infant foods and feeding it was unanimously agreed that no artificial food was equal to milk, water and sugar in infant feeding.

In his presidential address before the Pediatric Section of the American Medical Association at its last meeting, Dr. Clifford G. Grulee said: "There is probably no advantage whatever in the use of proprietary infant foods, and practically no indication for their use."

Moore of Portland, Oregon, says that every mother can nurse her baby. This is an ideal devoutly to be hoped for, but not

yet attained in most practices; and modern habits of life and society do not promise well for its attainment in America, at any early date.

Are we doing our full duty or anywhere near our full duty when we relieve the acute gastro-intestinal crisis by calomel and oil without explaining the cause of the trouble, the errors that have been made that brought on the illness; without teaching, admonishing, eternally instructing the mothers as to the proper foods, the proper feeding intervals, etc.

I repeat: There is no other branch of medical practice in which the customs and usages are so benightedly antiquated, the prejudices so firmly established, and the ignorance so profound as in pediatrics.

For instance, almost every one believes that eating sweets, especially candy, will give children worms; while if we stop to think we know that this is absolutely impossible; for a worm like every other living thing above the single cell organism that reproduces by physion, comes from an egg of another of like kind. We also know that almost all candies and sweets are cooked in the making and that a cooked egg will not hatch.

The explanation of this most widely accepted and erroneous idea, as you all know, is that the symptoms that are commonly attributed to worms are not due to worms at all but to indigestion; and that nothing so readily produces indigestion as candy and sweets.

It is so much quicker and easier to agree with the mother that "the baby is cutting teeth" than it is to ascertain what the cause of the illness really is and to explain it to the mother.

Thus we add to and perpetuate the ignorance rather than doing our bit toward giving the public the information to which they are entitled, and by so doing help to raise the plane of infant care and lower the rate of infant mortality.

A case in hand just now is a good example of the evil results of careless diagnosis and treatment. A boy 9 years old. Seen a month ago by a young physician whose given him without effort upon his own part, father was a doctor, whose education was given him without ecort upon his own part, and who should be one of the outstanding men of his city. After a careless, superficial examination he made a diagnosis of "A walking fever is all I can make out of it."

When I saw the boy he had painful ankles, swollen joints, anemia, masses of submaxillary glands that could be seen across the room, two very badly decayed teeth, temperature, very badly diseased tonsils, a heart murmur, and some casts in his urine.

Every time we make such a snap-shot diagnosis we not only do the patient an injustice and possibly an irreparable injury, but we leave that home a poorer doctor than when we entered. And every time we make a careful examination and an accurate diagnosis, giving intelligent explanation and instructions to the patient or the parent, no matter how simple the case may be, we have taken a step upward on the ladder of skill, and leave that case a better doctor than when we came.

Just at this point I think it may not be amiss to borrow from a popular automobile bill board advertisement: "There is no saturation point for standard quality." This applies to the medical profession as well as in the automobile world.

I recall a case, and we all have many such, in which before I entered the house and three times after I entered, I was told that the baby was cutting four big teeth. That was true. The baby was cutting four big teeth, but that had absolutely no bearing upon the vomiting and dysenteric enteritis from which the baby was suffering.

This baby was 14½ months old, was nursing whenever it wanted to, both day and night and at intervals of from one-half hour up, was taken to the table with the family and ate everything that the family ate, including baked beans, fried potatoes, ham, cheese and bologna sausage.

It had cheap store sweet cakes and candy several times every day and cocoa cola two or three times a week. The grandfather had brought it an early June apple—one of those that are always eaten before they ripen, because they are the first of the sea-

son. It had eaten only half of the apple. Careful questioning elicited the information that the first thing vomited was pieces of raw apple and that like chunks of undigested apple had been passed in the stools. There were twelve very good reasons for the illness of this child but none of the several persons present thought of anything except that he was cutting four big teeth. Let us remember, and teach our patron mothers that teeth almost never make babies really ill.

I recall another baby, 13 months old, that was being fed fried potatoes three times a day, and fried eggs, yet the doctor was criticized as being at fault because he could not cure the baby's dysentery.

About the same time another baby 15 months old that had been fed fried potatoes *five times a day*, and dried beans. They had had four doctors and in the words of the mother: "None of them did the baby any good." Of course not. And in this case the doctors deserved in large degree the criticism they received, for only one of the four had given a word of instruction in regard to the feeding of the baby and this one gave no adequate or specific instructions as to either foods or proper intervals of feeding.

Of course these two infant lives were sacrificed to the ignorance of their young mothers, but who is responsible for the ignorance of our young mothers? Do we who do obstetrics, or we who care for the sick children later take the time to give these young mothers adequate instruction and information as to the care and feeding of their babies? Or do we leave them to get their instruction from the "granny women" whose source of information in pediatric matters has come down in an unceasing flow through the dark ages, almost from the time of Eve?

Does the responsibility for this lack of information rest wholly upon the shoulders of us physicians? No. The medical colleges must bear a large part of it.

If in my first medical course a single word was ever taught me in regard to the care and feeding of infants and children I do not recall it. And it is only in recent years that even the best medical schools have made any pretense of a pediatric course.

I was greatly surprised a few days ago at being told by a recent graduate of a prominent medical school that—and I quote his exact words—"They didn't teach us anything about children. Our course in pediatrics didn't amount to anything."

Perhaps the thing that should concern us most is not who is responsible for this woeful ignorance with its awful results, who is responsible for the death of these little ones, some 300,000 of them annually in the United States, who die under one year of age, but what is the remedy and who is to apply it?

Whether we of the medical profession are responsible for much or little of this condition, surely we must bear very largely the burden of producing and applying the remedy, and the shame of it is that we have not done so already and even long ago.

Like the policeman in the Pirates of Penzance, the physician has a hard job. If he gives the mothers the information that they need and ought to have, he is going to offend many and almost break the hearts of some; yet in the end he will win the everlasting gratitude of a large number, and save the lives of a great many more of their children.

It is a pearl of great price to have a mother tell you that she owes the life of her baby to you, and it is an awful thing to realize that a mother feels that you are responsible for the death of her child. Especially is this true if she has good reasons for feeling so. *Some things are worth more than money.*

Surely the situation demands our most serious consideration, and I want to appeal to you all very seriously, in the interest of the infants and children of our communities, that we all take more time to instruct the parents, to reason with them, to explain to them, and to teach them the more advanced ideas and methods in the care, feeding and treatment of the little ones; that our glory may be in a lower death rate, not only in infancy but at all ages, and in a more sturdy and better type of West Virginians.

CASE REPORTS

Riga's Disease (Cachectic Aphthae)

By CHARLES M. BRAY, *A.B.*, M.D., F.A.C.P.
Morgantown, W. Va.

The report of a case of Riga's disease due to its rarity in this country may be of some interest to West Virginia physicians.

In 1881 Antonio Riga, of Naples, drew attention of the medical world to a peculiar tumor of infants and a more complete description was written in 1893 by Francesco Fede, editor of *La Pediatria.* The disease was, however, known before that time. It occurs almost exclusively in southern Italy, where it is endemic, and is seen only in infants following the eruption of the first teeth or as a sequel to whooping cough. The origin is from a small ulcer of the lingual frenum, which grows rapidly into a tumor formation, gray and painless; this later undergoes superficial necrosis. In fatal cases there is marked wasting, without fever, great enlargement of the liver and spleen and the skin assumes an earthy hue. The greater number of babies show no constitutional symptoms. The etiology is not definitely known, but there probably is a racial or hereditary factor.

According to Mouchet differentiation from herpes aphthae and mucus patches is sometimes difficult. However these are always multiple while in Riga's disease there is only one lesion. The ulceration is thought to be due to unsanitary mouth conditions or mechanical irritation from sucking or the incisor teeth.

Brun, Pedola and Pandolfi agree on the following histology: "The sections, cut perpendicularly to the piece removed, showed that the successive layers of buccal mucous membrane had undergone various alterations: (1) The conjunctivovascular tissue of the mucous membrane was gorged with blood vessels, mostly capillaries, very much dilated and lined with normal endothelia, several of which showed evidence of caryocinesis. The connective tissue spaces, distended by a lymph that was somewhat rich in white cells did not contain any kind of microbe. The epithelial layers of the mucous membrane rested on a series of long conjunctival papillae amply provided with capillary vessels, which were larger than usual. The dermal papillae corresponding to the tumefied mass were hypertrophied. On the borders of the specimen the papillary protruberances were not half so numerous as in the center of the hypertrophied mass. It was the same with the epithelial layers, so that from this point of view the edges of the tumor and its center were different in the same specimen.

"On the edges, the pavement epithelium were accumulated in thick bands, terminated by a collection of nucleated epithelial cells, flattened, and much denser than at the surface of the normal buccal mucous membrane. Between the hypertrophied papillae the epithelial elements, which were very broad, were deeply buried, without however, having passed at any point the normal limit separating them from the dermal tissue. There was no trace of any neoplastic epitheliomatous production. It was at most an hypertrophy of the mucous membrane in all its parts.

In the center of the mass the condition of the parts was different; there the derma was ulcerated, at least denuded, at a great many points. The papillae were abraded, some had disappeared, and all the epithelial layers had been shed and replaced by a very characteristic fibrino-leucocytic exudation. The diphtheritic false membrane covered nearly the entire tumor. The layers of fibrin were formed at the expense of the epithelia and of the leucocytes which were exuded.

Two distinct types of organism were found: (a) Long bacilli, rather slender, susceptible to Gram's solution, and situated only on the surface of the false membrane, into which it scarcely penetrated. (b) There were micrococci, round, slender, often in

diplococci and in round masses, sometimes also in chains. These microbes were sunk in the surface of the deepest layers of the false membrane, without ever going so far as the layers of fibrinous exudation. The mass was purely inflammatory and not a tumor."

Case presented January 26, 1927, a well developed, male, white infant, nine months of age, from American parentage the family history was negative except that the child sprang from a combination of French and Dutch extraction rather than Italian. The past history showed nothing of importance. The two lower incisor teeth appearing at about seven months; no infections until the onset of pertussis the middle of November, 1926. The lesion was first noted by the mother about December 13, 1926, as a small, rather elevated plaque, showing some ulceration and the physician in charge used silver nitrate locally, without improvement; rapid growth following.

When first seen by the writer the child presented a grayish, rounded, buttonlike elevation of the lingual frenum, about one-third inch in diameter, thicker in the center, thinning towards the periphery and covered by a thin exudation, which, according to the mother, varied much in extent. The exudation wiped off rather easily and at subsequent visits was absent. To palpation the consistency was firm, resembling thick parchment and distinct from the floor of the mouth; salivation was increased; sucking and breathing somewhat interfered with from the upward protrusion of the tongue, the end of which rested upon the lower incisor teeth. There were no adenopathy, fever or weight disturbance, but it was noticed that recovery from the sequellae of pertussis was slow and further that progress was rapid following the removal of the lesion.

Treatment—February 12, 1927. Upon grasping with forceps the mass proved to be very friable breaking into such small pieces as to prohibit pathological examination and showing a fairly marked tendency to bleed. The base was lightly electrocoagulated and recovery uneventful leaving a very small, white, pliable scar.

City Hospital.

Sub-Deltoid Bursitis

By C. FRED FISHER, M. D.
Richwood, W. Va.

This condition, while seemingly unusual, is in all probability more common than supposed, for many, no doubt, are diagnosed and treated as arthritis of the shoulder joint and recover, with more or less disability of the extremity.

A. E. Codman points out that the sub-deltoid and sub-acromial bursa are one and the same thing. If the arm is abducted the bursa is entirely sub-acromial and when adducted a large portion is sub-deltoid. This bursa is situated beneath the deltoid muscle and acromion and over the greater tuberosity of the humerus and the tendon of the supraspinatus.

This case I report below has for its etiological factor trauma, and represents to my mind an acute exacerbation occurring in a chronic and recurrent bursitis.

Case—J. B., age 44, sawyer, married, came to me January 5, 1926, complaining of severe pain in the right shoulder. His past personal and family history are unimportant. He stated that in October, 1925, he struck his right shoulder against an upright in the mill. His injury caused him considerable pain for four days, but he did not cease working. There was no swelling or redness present.

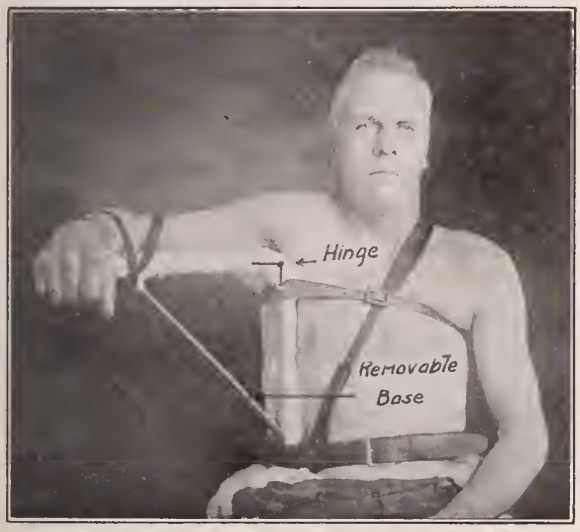
May, 1926, he suffered a severe attack of pain in region of shoulder, relieved by rest and heat, and ever since he has suffered limited motion in the joint, difficulty in putting on coat, shirt, etc.

December 31, 1926, pain developed once more in shoulder, gradually increasing in severity, radiating down the outside of arm to hand, with marked tenderness on the outside of the shoulder. He was unable to sleep and could not lie down.

January 1, 1927, he saw his family physician and was given morphine for relief and diagnosed as "neuritis." The shoulder at this time was "swollen" and he was unable

to stand the pressure of his clothes. His treatment consisted of liniment.

The day I saw him he was in great pain, bathed in perspiration, temperature 100, pulse 88. He walked very carefully and held his arm in the exact manner of those with fractures of the clavicle, viz., the disabled arm was closely adducted to chest



and supported at the wrist by the hand of the sound side. His head was turned to the right side also.

Examination of eyes, ears, nose and throat negative. Teeth good. Heart and lungs normal. Urinalysis negative. Wasserman (done later) negative. Reflexes present and normal. Right shoulder red, swollen over area size of palm, over area deltoid muscle exquisitely tender, and he was unable to stand only the slightest manipulation of the arm, and the scapula moved with the humerus. Axilla negative. Just below outer edge of acromion an oval mass could be seen and felt, flat in contour, its base about 2½ inches in its longest diameter, and about 1½ inches in the shortest diameter. On account of the extreme pain Dawbarn's sign could not be elicited. X-ray of the shoulder showed a normal joint but a marked clouding in the region of the bursa.

Diagnosis: Acute Sub-Deltoid Bursitis.

Local treatment consisted of hot half saturated magnesium sulphate dressings every four hours, and a pillow placed in axilla, gradually pushing it upward. In about one week the local symptoms had subsided so that the splint shown could be used. The splint was worn in daytime, removed at night, and the patient lying down the arm was placed at right angles to the long axis of body and held by a large pillow. In the meantime pain was relieved by the following:

Tablet:

℞	Acetanilid	2½ Gr.
	Camphor monobromated	½ Gr.
	Sodium Salicylate	1 Gr.
	Extr. Hyoscyamus	⅛ Gr.
	Tinct. Gelsemium	3 Min.

and general supportive treatment used. Every other day passive motion was employed and massage *about* the bursa but not exactly over it.

February 25, 1927, he had recovered sufficiently to return to work. Examination February 20, 1927, showed the small localized swelling still present but not tender, and use of the arm caused no pain and he had recovered almost full use of it.

There is little, if any, new thought in this report except probably the splint. It represents a combination of both Monk's and Codman's treatment of this condition. Monk advises the patient to sit by a table with the arm abducted on a pillow that is on the table. Codman's splint is excellent but cannot be used early in acute cases for the amount of abduction necessary to place the arm on it could not be borne. It is applied to the body direct and is supported by shoulders and the belt at waist. This splint is illustrated on p. 820, *DaCosta's Surgery*, eighth edition.

The splint I used was made of light wood, triangular in shape, and its size and support as adapted to the body is shown. The sides of the triangle are united at the apex by a flat hinge. The base is removable and fits into a small slot in each side. By using a different length base the angle may be increased or decreased at will. The splint is worn over all the clothing except the coat, can be taken off or put on without any assistance, and is comfortable. In view of the removable base, the splint can be used early when abduction is limited, and the

abduction can be increased to any amount desired by simply increasing the length of the base by inserting a longer strip of wood.

McClung Hospital.

A Case of Unusual Congenital Deficiency and Deformity of Bony Structures

By DRS. ARTHUR A. SHAWKEY *and* A. C. LAMBERT
Charleston, W. Va.

M. F. B.—Female. Age 13 years. The family history is lacking in anything of special interest. Both parents living and well. One sister 10½ years old, strong and robust.

The patient has had chickenpox, measles, whooping cough and scarlet fever.

Height with shoes, 54¾ inches (average for her age 60 inches).

Weight with ordinary clothes, 54¾ pounds (average for her age 90 pounds).

Average weight for her height 72½ pounds.

Under weight for her height 7¾ pounds (10.7%).

Under weight for her age 45¼ pounds (50 plus %).

While this child is not robust, she has not consulted a physician or had series illness since the scarlet fever about three years ago. She attends school regularly and has progressed almost normally.

In the regular routine inspection by the school physician, the peculiarly erect posture and carriage of the child was noticed, and on further inspection she was advised to see a physician for more thorough examination.

Examination showed a rather frail child with over erect posture, slightly inelastic gait, marked widening of the base of the neck, square shoulders, absence of the normal degree of curvature of the spine, certain abnormal prominences about the region of the dorsal spine—rather unusual findings which are best explained by the X-ray pictures and report:

Lateral View: The first, second, third, fourth and fifth cervical vertebrae appear to be normal. The sixth cervical vertebrae is tilted slightly forward. The seventh cervical is represented only by the transverse processes and lamina on the right side. The first dorsal vertebrae is tilted forward at an angle of 25°. From the first to the seventh, the dorsal vertebrae are absent and are represented only by two fan-shaped bones which are mal-formed and fused transverse processes. The eighth, ninth, tenth, eleventh and twelfth dorsal vertebrae appear to be normal.

Anterior Posterior View: The first, second, third, fourth and fifth cervical vertebrae appear to be normal, except the transverse processes are rather rudimentary. The sixth cervical vertebrae shows two

processes on the right side, which are also very rudimentary. The seventh cervical is not seen, only on the right transverse process is visible and is fused with other mal-formed vertebrae. There is a large fan-shaped area of bone which contains five articular fossi on the left side, and two articular fossi on the right side. The ribs on the right side appear to be loose in the tissues and are not articulated with the spine. On the left side, the ribs articulate with the rudimentary fossi, situated in the mal-formed transverse proscesses. The ribs leading from these fossae, on both the right and left side, are rudimentary. The seventh dorsal vertebrae is connected by fusion with the mal-formed proscesses, mentioned above and is situated at a point in the spine where the second dorsal vertebrae should be. The

eighth, ninth, tenth, eleventh and twelfth dorsal vertebrae appear to be normal.

In this view, there is noted a fracture of the seventh rib, 5 c.m. from the mid-spine line on the right side of the chest. On the left side of the chest, there is a fusion of the seventh and eighth ribs.

Comment: Two points in this case are especially worthy of notice. First, while this is undoubtedly a condition originating congenitally, there is no record of its having been detected previously. Second, physical exercises had been recommended as a remedial agent, which, had they been resorted to, would most certainly have proven disastrous. This shows the importance of careful study of a case before advising physical training.

Mountain State Hospital.

"Hydrophobia—Report of Case"*

By M. S. DOAK, M. D.
Price Hill, W. Va.

C. H., age 10 years and 10 months, well developed and nourished white boy, mental development normal. He was bitten by a stray dog December 3, 1926. The bite caused a deep, jagged wound of the right cheek. The wound healed nicely and only a scar was left at the end of three weeks. The parents were advised to locate the dog for observation and examination but this they failed to do, and apparently very little was thought of the injury at the time.

On December 25 the boy complained of general malaise and a sore throat and was treated symptomatically.

The case first came under my care and observation on December 29, 1926. At that time the boy became emaciated and and was delirous or semi-delirious most of the time. He could be aroused, however, and would talk with fair intelligence. His temperature was typically typhoid, ranging from less than one degree above normal in the morning to 103 in the evening. Fear was frequently expressed in his delirious throughout the course of the disease. The clinical picture was typical of typhoid fever in about the third week.

Phys. Exam. Head—Moving from side to side. Eyes—Staring and continually in motion. Mouth—Dry, lips parched, tongue heavily coated and with red tip and edges. Throat—Slightly inflamed. Chest—Heart, rapid, no murmurs or irregularity; lungs, negative, except for rapid respiration. Abdomen—Flat, no marked tenderness or masses. Extremities—Negative except for continual movement.

On December 30 the picture was the same but delirium was more pronounced and the patient could not be easily aroused. Blood was taken for typhoid culture and widal. Both proved negative.

On December 31 the patient could not be aroused from a restless delirium. There was continuous movement of the head and extremities with occasional spasmodic twitching spells lasting for a few minutes. Morphine sulphate was given in 1/16 grain doses at four to six hour intervals for the sedative effect. Dr. E. E. Jones of Mt. Hope was called in consultation. Neo-salvarsan 0.6 gm. was given intravenously.

The patient would occasionally clear the throat of a thick tenacious sputum. The temperature remained at approximately 104 (ax.) all that day and by midnight had reached 105 (ax.)

At about eight-thirty A. M. on January 1, 1927, the boy became quiet and remained so until he died at 10 A. M.

* Presented before Raleigh Medical Society at Beckley, W. Va., March 31, 1927.

Right Hemicrania (Trigeminal Neuralgia) of 4 Years' Duration Unrecognised Syphilitic Etiology: Yielding Rapidly and Completely to Intensive Treatment

By WM. SEAGROVE MAGILL, A. M.; M. D.
Morgantown, W. Va.

J. S., white, single, native of Austria, 31 years old, 14 years in U. S. A., operator of saw in lumber mill at Cass, W. Va., for many years; was referred for diagnosis and treatment by Dr. G. H. Hull of Durbin, W. Va. Negative family history, strong, stockily built man of constant good health, blonde type, industrious, mentally and physically quick; but now discouraged intro-

spective, with thoughts of suicide at times, unfit for work. Weight 154 lbs.

A little over five years ago contracted syphilis for which he took prompt and extended treatment—several series of salvarsan and one of bismuth; a total of 42 intravenous injections in three years' time. There was a prompt response to treatment, the Wassermann becoming rapidly negative and remaining so, as shown by three tests at long intervals, of which the last was in November, 1926. Wassermann of both blood and spinal fluid is *now negative.* There have never appeared any further symptoms of syphilis—no secondary eruptions, etc.

Four years ago the patient commenced to have a dull, constant frontal headache that persists ever since, with a feeling of soreness always present; this was soon complicated by attacks of intense hemicrania (rt.) in sudden onset, often accompanied by ringing of the right ear (sometimes the left ear, sometimes of both ears) and this ringing became more and more persistent after cessation of such crises; which the patient connects closely with the weather—wet or changing—and always coming on in late afternoon, or evening with a premonitory period of perhaps two hours in which the patient anticipates his attack, feeling at the point of frontal headache an increasing soreness, heaviness and intracranial pressure ("tightness") then a sudden, aura-like onset of sharp pain from low down behind the right ear shooting along the supraorbital (more rarely, the superior maxillary, seldom involving the inferior maxillary distribution of the facial nerve, but often radiating upwards on the neck behind the mastoid process. This hot, burning, shooting pain, so intense as to start the tears and make the sufferer cry out, causes a sensation of blindness and of falling forwards in rotation toward the right side. The man cowers but *does not fall,* the pain is intense for perhaps a second or up, to twenty minutes, followed by intense sweating however often strictly localized to the involved region which is at times post-marked by urticaria (rarely trophoedema) that slowly disappears. There may be only one acute crisis; or a first onset may be followed serially at half-hour or longer intervals but of diminishing intensity. For the first year these attacks seemed to increase in frequency and severity but since then have remained of stationary degree. After crisis the patient was stupified and the regions affected remained "sore" for a long time. Exhausted by pain, fear of falling, he left his skilled work and has throughout this period sought medical relief and expert consultation at Pittsburgh, Uniontown and Morgantown; but without avail; in despair ekeing out a pitiful existence as an inexperienced miner—always unfit for work—with suicidal tendency.

Exhaustive physical, clinical and laboratory examinations and the close analysis of results obtained, and of many minutiae of symptoms detailed on repeated interrogations led to a diagnosis of syphilitic involvement of the trigeminal nerve—a probable endoarteritis of the frontal ascendant artery just before or at the junction of the ascending branch to the parietal artery (divisions of the Sylvian) and involving the emergent faisces of the origin of the nerve in this region. This diagnosis is *maintained in* spite of the negative Wassermanns and that the Lange colloidal gold color scale of the spinal fluid is normal; and this is *confirmed* by the therapeutical result.

The patient, kept on simple diet, and at work, and loose bowel action constantly maintained, was given at 2 day intervals—intravenously—"Mercurosal (i.e. Disodium-mercuri-salicyl-acetate) 5 doses, each of 0.1 gramme in 5 c.c. of distilled water; and then twice a week this same medication but in slight increase of dose each time to the point of mercurialisation—a total of 12 injections. Rest of a week and then, every other day, intravenous injections, three in number of sodium iodide (1. gramme in 10 c.c. of water followed by injections (5) twice a week of the same salt but in doses of 2. grammes in 20 c.c. of water as the tolerance of the patient permitted.

At the end of the first three weeks of treatment all of the acute crises of pain had completely disappeared, and in a week more there remained only *occasional* headaches,

no more vesperal, never severe, always connected by the patient with the state of the weather, lasting not more than a hour, easily controlled by analgesics such as "pyramidon" in very small dose. The headaches are diminishing in frequence (once only in one week) and variable in the spot of affection, (more of a neurasthenic type). The headaches are of so little importance to the patient actually that he never complains of them; and that he occasionally has one is only elicited by careful interrogation. There are still persistent and often prolonged ringing of the ears which will require careful control as it is evident there is an already established sclerosis there. The patient for sometime has been working constantly and well, considers himself completely cured, contemplates marriage and in a month of further control if uneventful he will return to his skilled labor as a sawyer.

He realises the import of careful supervision for a long time to come, of attention to his audition and at the first sign of nerve affection will be given further intensive treatment; but for which there now appears to be no indication.

Pelvic Abscess, Suggestive of Cancer

By ALBERT G. RUTHERFORD, M.D., F.A.C.S.
Welch, West Virginia

Case No. 1614, Welch Hospital: Mrs. B., referred by Dr. C., admitted February 24, 1927.

Diagnosis: Gynecology—Pelvic abscess from left tube forming a mass on sigmoid colon. Suggestive of cancer.

Operation: February 28, 1927. Exploratory Laporatomy: Excision of piece of tissue around sigmoid. Supravaginal hysterectomy.

Clinical Note: Complaint: Painful mass around to left of umbilicus of three weeks duration. Mass getting larger.

F. H.—Negative.

P. H.—The usual exanthemata of childhood. Age 28—married 13 years—six children—ages 12, 10, 8, 6, 4 and 2. All living and well. No miscarriages—menstrual periods began at the age of 12. Regular every 28 days—moderate flow—moderate amount of pain—L. M. P. three months ago. Had a leukorrheal discharge after marriage that lasted ten years. No discharge for past three years.

P. I.—Onset three weeks ago with dull ache in the left side of pelvis—pain and tenderness around the umbilicus. Pain radiates to the right of pelvis and to the small of back—continuous but worse at night. No nausea or vomiting. General malaise. Bowels regular. At the beginning of this patient could palpate a mass in the region of the left tube and ovary. Thought herself pregnant and inserted a hat pin in the vagina to induce abortion—subsequently passed some clots but mass in the left side continued to get larger.

P. E.—Well nourished—rather obese—white woman. Suffering with pain in the lower abdomen. Head—Lungs—Heart: Normal. Abdomen: Soft. Liver not enlarged—Kidneys and spleen not palpable. Tenderness to the right of umbilicus where one can palpate a mass the size of an orange—movable but seemed attached to bowel. Pelvic: Marital outlet: Cervix small and hard—freely movable—no masses. Slight bleeding from present menstruation.

Pre-Operative Diagnosis: Question as to Ectopic—Tubal pregnancy or cancer of the sigmoid.

Operation: Exploratory Laporatomy—Midline Incision: On opening the peritoneal cavity we found a mass occupying about 4 inches of the sigmoid. Very hard on palpation. Uterus, right tube, and ovaries in normal position. The appendix secondarily inflamed. The left tube and ovary embedded in this mass around the sigmoid. On attempt to isolate the region underneath the sigmoid we found an abscess originating from the fimbriated end of the tube, which ruptured. The enlarged sigmoid on palpation was hard like cancer. After isolating the left tube and ovary, we removed some pieces of tissue from around the sigmoid for microscopic study—then inserted drains underneath the loop of bowel. Did a supravaginal hysterectomy and closed the abdomen with four drains.

Comment at time of Operation: I believe that what this woman had was a salpingitis

of the left fallopian tube and that the fimbriated end of the tube became attached to the loop of bowel forming an abscess, which became very much indurated, giving the appearance of cancer. Pathological report from Dr. Bloodgood confirms this impression. The patient is doing well. Convalescence satisfactory.

Ruptured Appendiceal Abscess*

By WILLIAM ALEXANDER SIMPSON, A.B.M.D.
and J. H. MCCULLOCH, M. D.
Oak Hill, W. Va.

The following cases are selected from the Collected Case Reports of Oak Hill Hospital not because there is any particular element of the unusual in any of them but because each one presents some interesting feature worthy of consideration.

Case No. 2302—C. T., male, age 29, occupation coal loader. Admitted to the hospital October 1, 1926, following an injury to the lumbar spine by a fall of slate. He was in fair condition, pulse 100, temperature 98.6, urinalysis practically negative. The X-ray examinations of lumbar spine and pelvis were negative for any fracture. The white cell count was 5400. He was put to bed for observation. The bowels moved on the day of admission and again the following morning without medicinal encouragement. Approximately 18 hours after admission the patient complained of exquisite pain in the abdomen. Upon examination the abdomen was somewhat distended and generally tender with no localization of pain. Another urinalysis was again negative. The temperature at this time was 100.4 and the pulse rate was 104. During the night he continued to complain of abdominal pain and it became necessary to administer morphia for relief. The following morning the clinical picture had changed completely. There was an anxious expression in the face, the pulse rate had stepped up to 120, the abdomen was distended and there was generalized muscular rigidity. A preoperative diagnosis of visceral rupture was made and the abdomen opened. The entire cavity was filled with pus of a characteristic colonic odor. A painstaking search of all contained viscera failed to reveal any rupture. The appendix was next inspected and a most unusual condition presented. The appendix had been torn from its bed in what was apparently an old encysted abscess which had been well walled off. The appendix was removed and the abdomen closed with drainage.

The patient experienced a stormy convalescence for five days during which time he was eliminated religiously and to the limit. He left the hospital 22 days after admission.

On the strength of our operative findings in this case a past history was of much interest. The patient stated that one month before his accident he had suffered an attack of "acute indigestion" characterized by cramping pains, constipation, etc., but that after several days had been able to return to work. In the interim he had been troubled with constipation and some abdominal pain never sufficient to incapacitate him however.

There are two interesting features in the consideration of this case to which your especial attention is invited. The first is the pathology induced by the accident which would have resulted fatally had not surgical intervention been resorted to. There was little to point to the existence of a ruptured appendiceal abscess. The blood count was not illuminating, nor was the temperature or pulse rate. The diagnostic features upon which a presumptive diagnosis of visceral rupture was based were pain, abdominal distention and musclar rigidity. These were sufficient warrant to open the abdomen. And this brings us to a consideration of the second of the interesting features. In the management of traumatic surgery we feel that when in doubt open every abdomen that may have suffered a rupture of viscera. If your findings are negative you have done no harm and should you find injury or, as in this case, other pathology you have probably saved a life.

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* From the Collected Case Reports of Oak Hill Hospital.

Experience with Mercurochrome—220 Soluble in Sepsis

By DRS. R. H. MCCLUNG *and* C. F. MAHOOD
Alderson, W. Va.

Two selected cases of septicemia occurring in the practice of Drs. R. H. McClung and myself at the Alderson General Hospital, showing its beneficial effect in one of the cases, and its failure in another.

Case No. 1—Grover B., white boy, age 11. December 22, 1925. Referred by Dr. L. H. McClung for ear examination. Chief complaint pain in right ear and right side of neck. Fever of a remittent type the past week. Temperature 101, pulse 110 on admission. Tenderness general over right mastoid and muscles on right side of neck. Slight pain at tip of process and over antrum on pressure. Ear drum shows slight congestion, with but little bulging. He had previously suffered with frequent attacks of ear ache. Tonsils small, and a small amount of adenoid tissue in vault of pharynx. White blood count increased to 10,000. X-ray not conclusive, but outlined the lateral sinus very distinctly which seemed rather large for boy of his age. Drum membrane was freely incised under ether anesthesia, followed by small amount of bloody discharge, changing in a few hours tc pus. December 23, patient was more comfortable, temperature up and down to 103 in the afternoon. Showed decided rigidity of muscles of neck on that side. December 24, temperature in the afternoon was around 105, with but little discharge from the auditory canal. Patient seemed extremely ill, and at 7 p. m. we did a simple mastoid on right side. The Antrum seemed rather deep and was filled with a thick semipurulent secretion, the cells were cleaned out to the tip, process seemed very much sclerosed with no pus in any of the cells.

December 25. Pain in mastoid was much less, with but little discharge from middle ear or showing on dressings, but continued to run considerable temperature during the next ten days of a septic type, and patient looked extremely ill, having chills and sweats at times. White blood count showed a decided increase. Widal test for typhoid was negative. During this time patient complained of severe pain in right eye, which showed slight peri-corneal congestion, and numerous small specks in Vitreous. Pupil dilated evenly under weak atropine solution, and with its use and cold compresses soon quieted down. Patient had been obstinately constipated which was relieved by laxatives and enemetas. Patient was evidently septic, and was being treated symptomatically. In casting about for relief, we fell upon mercurochrome—220. 1 per cent solution intravenously as a *Dernier* resort. January 9, temperature was around 105. Pulse rapid and patient very stupid. First dose of mercurochrome was given today 8 c.c. of 1 per cent solution in vein at bend of elbow, which was followed in a few hours by rather marked chill, diarrhea and drop in temperature, temperature rising again to above 105.

January 12. Mercurochrome repeated in dose of 7 c.c. producing considerable reaction with a more gradual drop in temperature. During the next few days patient was more comfortable, and treatment seemed to have been of benefit. January 19. Temperature was around 103, and the third dose of mercurochrome was given 7 c.c. this time. Producing slight reaction, temperature coming down and remaining within normal limits. Mastoid wound continued to do nicely, patient was gaining in weight, resting well and went on to nice recovery, and discharged cured January 30, 1926. Mercurochrome was of undoubted benefit in this case. Temperature chart appended.

Case No. 2 (showing the ineffectiveness of mercurochrome in a case which later responded to treatment with Anti-Streptococcie Polyvalent serum).

Paul J.—White boy age 7. Admitted to A. G. H. May 19, 1927. Had been under care of his family physician, who treated him during January for measles. During March for influenza, and during latter part of April for tonsilitis. Tonsils large and diseased with mass of adenoids in pharynx. Chief complaint pain in both ears, with a thick purulent discharge from left ear. T.

M. shows a large irregular central perforation. Right ear drum very red and decided bulging. No tenderness over either mastoid process. Temperature on admission 104.3. Pulse 128. Under ether right ear drum was incised, followed by very free bleeding, later changing to thick ropy pus. Both ears were treated by cleansing and encouraging free drainage, and instillation of proper antiseptics.

May 20-21-22. Temperature ran a typical septic course, with chills and sweats. X-ray showed mastoid cells distinctly outlined, with no pain in either mastoid process.

Afternoon of the 22nd. Temperature was around 106, pulse 130 and patient markedly septic. At 5 p. m. today mercurochrome 220 1 per cent solution was given in dose of 7 c.c. intravenously. Followed by marked reaction, free bowel movements and temperature dropping to 100. On the 23rd, slight rigor and the following day temperature again high. May 24, temperature up to nearly 106 with other symptoms of sepsis marked. At 9 p. m. mercurochrome 5 c.c. was given. Reaction not quite as severe. Temperature dropping to 102.5. May 25 temperature ran to 106, and dose of 5 c.c. was repeated. During the next few days temperature ranged from 101 to 104.5 with continued rapid pulse, sweats and chills. Evidently the mercurochrome was not helping the patient and was discontinued. The discharge from the left ear was clearing up, while the right continued to discharge for some time. During the next few days patient was treated symptomatically as occasion required. May 28, Polyvalent Streptococcic serum was given intravenously in dose of 20 c.c. with drop in temperature, with an up and down curve in fever and on the 30th, a 5 c.c. dose of mercurochrome was given while waiting for fresh package of streptococcic serum, with temperature rising to 105. May 31, Streptococcic serum was repeated in 20 c.c. dose intravenously, and repeated daily on the first, second and third of June, with patient now showing decided improvement, temperature coming down and remaining within normal limits until patient was discharged as cured on June 15th. Returned in August of this year and had tonsils and adenoids removed. Hearing in both ears good and back in school.

Mediastinal or Pulmonary Tumor *

By WILLIAM A. SIMPSON, A.B., M.D.,
and J. H. MCCULLOCH, M. D.
Oak Hill, W. Va.

Case No. 2321—H. A. D., age 30, married, occupation miner, admitted to the hospital August 2, 1926 with a history of injury on July 22, 1926. At that time he had been caught between a mine car and the side ribbing. X-ray of the chest was negative for any fracture of the ribs but did demonstrate fluid in the right pleural cavity. There were two solid masses presenting, one at the right sterno-clavicular junction about the size of a hen's egg and another in the right axilla, slightly larger, which apparently had no connection with the lymphatic chain in this area. The chest was tapped and yielded 500 c.c. of serosanguinous fluid. Microscopic examination of this exudate was negative for bacteria and pus cells. The admission diagnosis was pneumonia unresolved of traumatic origin. He was discharged from the hospital in two weeks and instructed to return when the reaccumulation of fluid should embarass respiration. He returned on August 22 with a somewhat changed clinical picture. The superficial masses above referred to had increased in size and the entire right chest was dense to fluoroscopy. There was an apparent solid tumor involving the mediastinum which encroached upon lung tissue on both sides laterally. The diagnosis was changed to mediastinal or pulmonary tumor. A thoracotomy was done and tube inserted simply to relieve him of the pressure effects of the pleural exudate. Within five days after this procedure all drainage stopped. This drainage had shown no bacteria, no elevation of lymphocyte count but some suspicious basal cells suggestive of malignancy. In view of the rapidity of development and the area involved no surgical intervention was even considered. The patient was advised of the gravity of his condition and,

* From Collected Case Reports of Oak Hill Hospital.

against our expressed desire that he remain in the hospital, returned home.

He was readmitted on October 6, 1926, in a moribund condition. He had developed an ascites of severe dimensions. The entire right chest was bulging and the heart was sharply displaced to the left, so much so in fact that the apex beat was located in the mid-axillary line on that side. He was again fluoroscoped and there was a solid tumor involving the entire right lung, the mediastinum and about one-third of the left lung. He had to assume an upright position in order to breathe. The urine showed a compression nephritis and the blood pressure reading was 160/60.

On October 11, 1926 the patient died. An autopsy confirmed our radiographic diagnosis. Histo-pathological section of the tumor mass proved it to be a basal cell carcinoma.

In commenting on this case there are one or two interesting features. They are of importance primarily from a compensation standpoint. It is to be presumed that this man was possessed of a malignant tumor prior to his injury but it would obviously be impossible to establish the incidence of such a neoplasm. It is presumable that such an injury could have stirred into activity a tumor which if not dormant was progressing slowly. Or more remotely the injury might have prepared the field for the growth of a malignancy. The average miner is prone to ascribe all of his bodily ailments to some real or imagined injury. This is particularly true of hernias. In this case, however, the commission took the liberal viewpoint that the injury was an excitant to the cause of death. His beneficiaries were therefore compensated.

Psoriasis—Experimental Mercurochrome Therapy (Intravenous)—A Case of Apparent Rapid Cure

By WILLIAM SEAGROVE MAGILL, A.M., M.D.
Morgantown, W. Va.

The patient, M. P.—electrician, 42 years old, native white, married. Negative family history, heavily built, strong, active man, non-alcoholic and of quiet habits, was presented by Dr. Howard T. Phillips, in his lecture to the Monongalia County Medical Society at Morgantown, W. Va., February 1, 1927, as a "Typical Case of Psoriasis" then under the care of Dr. B. M. Stout; by the courtesy of both physicians, he was referred to the writer for examination and treatment.

Shortly after the healing of a deep, dirty wound on the external upper surface of the right tibia, in July, 1926, close to this scar there appeared, rapidly enlarging, an itching, desquamating red spot—actually as large as the palm of the hand. Two days later anterior to and lower down on the same tibia came a second blotch; and a third was then found appearing on the left shin; all following more or less rapidly by others now about 40 in number of which half are as small or smaller than the end of the thumb, distributed on both legs, arms, back and more recently one anterior and below the right axilla; one behind the left ear at the hair line; one just above the point of the left eye-brow. Once established, no area has ever diminished nor disappeared, but frequently varies the intensity of red coloration and the degree of thickness of the outer edge of the involved spot.

Complete physical and clinical laboratory examinations show normal conditions except for the skin. Blood cultures in varied media are sterile. Wassermann (Kahn Test) is negative. The patient complains that the itching of these spots is constant and is more intense than is reported by his physicians.

After 24 hours light diet, complete evacuation of the bowels, rest in bed and with empty stomach, pulse 15. temperature 97.5 F. blood pressure constant at 72-128; a *FIRST INJECTION* of 10 c.c. of 1% solution of Mercurochrome-220 soluble-(freshly made in boiled and cooled, distilled water) was made into the vein at the left elbow, at 4:30 p. m. of *February 18th, 1927.* Reaction at 5 p. m. acute diarrhoea (8 liquid stools in 3 hours) unaccompanied by marked pain, but showing the fluroesence of the drug. At 7 p. m. P 90.T/102.2 F. patient

chilly and later sweating profusely. At 10:00 p. m. P/100.T/100. F. patient comfortable and passed a good night (during which were 4 liquid stools—the last at 6 a. m.) February 19th with P/96. T/98.5 F. patient "feels fine", says that he has slept well and that *all itching has ceased.* Diet of milk, eggs and oatmeal for this day is heartily taken. At 9:00 a. m. P/96. T/98.5; and at 4:00 p. m. P/100. T/100. F.; at 10:00 p. m. P/98. T/98.5 F.

Four hours after the first injection: 1st. Urination of 90 c.c. cloudy and deep tinged with mercurochrome; otherwise normal. No epithelial cells. 2nd. Urination 14 hours after first injection; 210 c. c. clear, deep amber color showing irridescence. During the next ten hours were two more (clear) urinations of which the last showed no more irridescence. Diet as above and *February 20th,* 10:00 a. m. *2nd INJECTION* of 20 c. c. of same solution. P/75. T/98 F. REACTION slight. No further diarrhea at 2 p. m. P/90. T/101.5 F. slight chill and perspiration later; at 6:00 p. m. P/100. T/98.5 F. patient feels "well" and eats heartily. No liquid stools; urine always clear. No epithelial cells. *February 21st.* Excellent sleep, fine appetite. Pulse and temperature quite normal, and at 7:00 p. m. *3rd. INJECTION* of 30 c. c. of same solution of mercurochrome. REACTION slight one hour later, P/100. T/102. F. with a little headache; but at 10:00 p. m. the patient was feeling exceedingly well and has continued so ever since.

Four days after his first enjection, the patient declared that the itching had entirely left him and has not returned. He does not scratch. He eats with hunger, now, everything, and the repulsion for meat which was marked with him throughout his trouble no longer exists, on the contrary he relishes extremely and is eating heartily of all meats, including pork. He remarks that he sleeps WELL and the sleep "rests" him which was not the case during his last six months, and he repeatedly states that he has not had the feeling of well being that he now enjoys for some years past. "I feel better than I have for years," he often repeats when speaking of his condition. The three spots particularly noted on head and face have completely disappeared as have also about 20 of the smaller spots. The rapidity of disappearance seems more a factor of their size than of their duration period. All areas remaining still visible are manifestly shrinking, there are no more raised edges, nor palpable thickened rims, the skin covering involved regions is markedly more elastic, with very slight desquamation (no more crusts) and the coloration of areas is passing from redness to dull pink or brown tinge.

Reinspected on March 1, and on March 23, last, it is evident by the rate of continued disappearance of all involved regions that the complete eradication of every visible lesion will be soon complete. The patient considers himself as *completely cured*;but is to report every two weeks for a long period yet to permit the control of the complete disappearance of every visible sign of lesion as well as the permanence of such cure.

A Monstrosity *

By D. L. HILL, M.D.
Wickham, W. Va.

On April 20, 1923, I was called on a labor case about 2:00 A. M. A normal, healthy colored woman about 27 years old, who had had three previous confinements, all normal children, living and well. They were 8, 6 and 4 years old.

The labor seemed normal and the patient said she had had a normal pregnancy with nothing of an unusual nature in her feelings, or the position, or the movements of the child during the pregnancy. Upon examination I found a foot presenting. I brought the other foot down and proceeded to deliver the child. I did not proceed very far however, for the hips hung in a very stubborn manner. I had to use brute force to bring the buttocks through and saw instantly what had caused the delay. It was a third leg not fully developed, but still containing bone and attached to the buttocks at the top near the spine. I saw also that the genitals were not only abnormal,

* Presented before the Raleigh Medical Society at Beckley.

but also that there were two openings side by side posterior to a dark fold of skin that appeared to be abnormal labia.

The large body and peculiar shape left no doubt in my mind that I had a monstrosity to deal with, but I thought I had already viewed the "monster" parts. The head hung even more stubbornly than the hips, and I inserted my hand, followed up the spine and found two necks, each apparently supporting a head. By this time I was desperate. I knew the baby had no chance to live and so I cupped one head in my hand and forced it through the cervix. The rest then was easy; that is delivering the child.

It weighed 18 pounds and the parent gave it to me to save funeral expenses, and possibility of someone robbing the grave and selling the baby or displaying it at some cheap carnival.

To deliver the placenta, was the next problem. There was only one cord and the patient had had no pains after an hour, nor could I stimulate any by massage. The uterus had contracted down but seemed to have an irregular outline. After every effort failed to deliver the placenta, I decided to deliver the placenta by hand and found the uterus apparently empty; following the cord I found a great slit in the upper right posterior uterus and the placenta attached partly outside and partly inside of the uterus. I grasped the placenta as well as I could and used traction on the cord and delivered it.

I have never explained the whys and wherefores of this case to myself so I cannot give you my explanation, but it seems to me that this uterus must have been ruptured at a former birth and that a flap had sagged outwardly adhered to the outside of the uterus leaving an inside membrane exposed on the abdominal side. Quite by chance the placenta adhered there on the edge of the gap and the enlargement went on principally inside the uterus with a consequent distortion when contracted.

This patient made an uneventful recovery, and except for rather more soreness than ever before, due no doubt to my bruising her during confinement, she said that she noted nothing unusual in her postpartum condition than at her former confinements except for the fact that milk did not form in the breast.

A Method for the Drainage and Irrigation of Empyema and Other Abscess Cavities *

By BANKHEAD BANKS, M.D.
Charleston, W. Va.

The method to be described, with the apparatus used, was worked out by the writer while resident at the University of Virginia Hospital and was there used in the treatment of acute and chronic empyemata as well as in other abscess cavities and infected wounds. Its chief advantage lies in the fact that filled once daily with irrigating solution and regulated, it is then automatic and therefore almost rids us of the human factor in securing adequate irrigation of wounds. In my experience I have found it very difficult, if not impossible, to get satisfactory and adequate irrigation while depending on the tube syringe injection method.

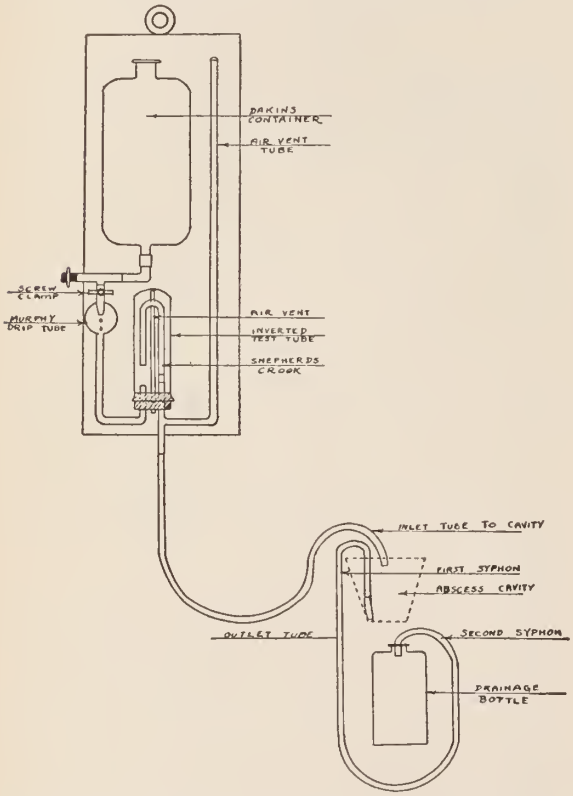
The apparatus is relatively simple and may be easily rigged up. Briefly described, there is a container for the irrigating fluid, (an ordinary infusion bottle may be used), this is connected by means of rubber tubing and glass T tube with a Murphy drip tube (above which is a screw clamp to regulate rate of drip), this being connected with an inverted, large glass test tube through a rubber stopper having three holes: (1) inlet, (2) outlet, (3) air vent; a glass shepherd's crook placed inside this tube passes through the outlet hole and is connected with tube leading to the wound, by means of a glass T tube—second air vent here being necessary. The apparatus as described is mounted on a cypress board, this rendering sterilization easy, also suspension above the patient's bed.

The method used to enter the empyema (abscess) cavity may be by (1) trocar intercostal puncture, (2) intercostal incision, (3) rib resection; novocaine infiltration

* Method described and illustrated before the Kanawha Medical Society, December, 1926.

anesthesia is used. In any other abscess cavity trocar puncture usually suffices to give adequate drainage. In any method used two tubes must be introduced—one as the inlet, the other as the outlet.

The method of trocar (intercostal) puncture is simple, easy and quick of performance. Two punctures are necessary—at the first the inlet tube is passed through the



trocar to reach just within the cavity, the trocar quickly withdrawn, the tube clamped and sutured in place by means of a silk worm purse string suture previously placed about site of expected puncture; at the second puncture the outlet tube is inserted to the most dependent portion of the abscess cavity, then withdrawn slightly, clamped and sutured in place as before. This tube must be of soft rubber so as not to damage the abscess wall or lung. The tubes are further fastened in by means of split strips of adhesive plaster. If tubes are put in and sutured in place properly there is practically no leakage about them. Dressings need be changed only occasionally. I have allowed cases of chronic empyema to go for as long as three weeks without a change of dressings being necessary.

The inlet tube is now connected with the irrigating apparatus suspended above patient's bed, and the outlet tube connected with a sterile bottle placed on floor beneath the bed. The clamps are removed and irrigation and drainage of the cavity started. Briefly described the method works as follows: After filling the container with irrigating fluid the rate of flow is regulated by means of the screw clamp above the Murphy drip tube; the solution feeds down and into the inverted glass tube, gradually rising in this and forcing air out by way of vent tube; when fluid reaches level of the top of the shepherd's crook, syphonage takes place into the tube leading to abscess cavity; when solution fills the abscess cavity, overflow takes place into the outlet tube, this then syphoning the cavity relatively dry; all of fluid from the cavity is collected in the large sterile drainage bottle and from this periodical cultures may be taken to determine the degree of sterilization of abscess cavity.

SUMMARY

(1) The method described is simple and easy of application, by its use we are assured that our abscess cavities and wounds are receiving adequate, systematic irrigation.

(2) It may be used in irrigating any wound or abscess cavity with any desired solution.

(3) May be used attached to wheel chair if we wish to have patient out in the fresh air and sunshine.

(4) Its use in abscess cavities results in great savings in dressings.

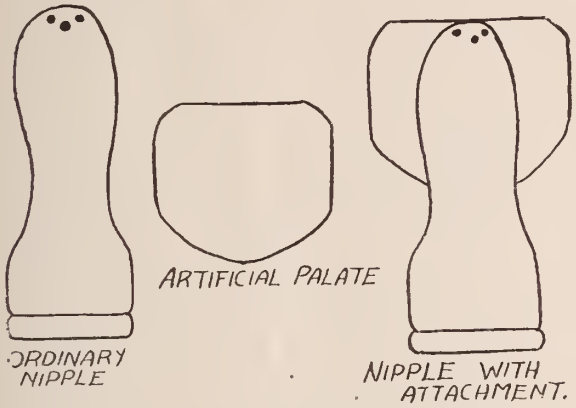
(5) Its use results in shortening the period of convalescence.

Cleft Palate

By CLAUDE L. HOLLAND, M.D.
Fairmont, W. Va.

In the case of infants with a cleft palate involving only the soft palate, nursing is usually performed without difficulty. In cases in which the cleft is complete, and especially if it be bilateral, nursing is quite impossible, either from breast or bottle.

The child should not, however, be deprived of breast milk because of this incapacity. The breast milk should be expressed from the breast and fed by artificial means.



This is imperative, since the child, if it survives, has before it the severe surgical procedures necessary for the correction of the deformity, and should have the benefit of breast milk, to be in the best possible condition.

The various means of administering food by spoon, dropper, tube, etc., leave much to be desired. I have found a modification of the ordinary soft rubber nipple facilitates the taking of food from a bottle. In some cases it is taken quite readily even when the cleft palate is accompanied by a hare-lip. A piece of soft rubber, cut from a motorcycle "inner tube" and shaped to fit the roof of the mouth serves very well. This artificial palate is attached to the nipple, as shown in the illustration, by means of a drop or two of rubber cement.

It is important that this artificial palate possess just the right amount of flexibility, so that it will afford resistance enough, but not too much. The opening in the nipple must be large enough to permit the milk to flow readily in response to the pressure of the child's tongue.

The use of this appliance has been found far superior to other methods of feeding in this condition.

SACROILIAC STRAINS

Below are found the conclusions of a paper by Dr. William B. Snow that appeared in the *International Journal of Medicine* for March, 1927. The paper deals with "Sacroiliac Strains and Displacements and Their Treatment" and the conclusions reached by Dr. Snow are particularly interesting.

"The cases well illustrate the treatment of the three types of conditions of which more than three hundred cases have been treated during the last five years in our offices, with an average success of over 90 per cent. of complete relief of all symptoms.

Conclusions.—(1) The first indication for the treatment of sacroiliac strains or displacements is the relief of all muscular spasm in the muscles of the pelvis and thigh and the removal of local swelling of the part with the static current.

(2) If there is a displacement, readjustment immediately following the relief of muscular tension.

(3) The thorough application of static sparks to all the muscles of the pelvis and thigh following the replacement and the application of many sparks over the swollen and inflamed tissues at the synchondrosis.

(4) The application of a sacroiliac belt or binder to hold the replaced ilium in position.

(5) In the acute stage of the first days very few cases will require more than six days to overcome all symptoms due to the strain or displacement.

(6) Chronic cases that can be replaced may be restored to a useful, painless condition in from one to three months depending on the degree of organized exudation that has developed.

(7) The ankylosed cases, if adhesions are not broken up and the bones replaced, may be greatly relieved by static electrical methods of the symptoms of neuritis and discomfort, but will be followed by an awkward gait due to the displacement that will be persistent."

THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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EDITORIAL

THE JUNE CONVENTION

With practically all arrangements completed, the sixtieth annual meeting of the West Virginia State Medical Association at White Sulphur Springs on June 21-23 inclusive bids fair to be the largest gathering of physicians and surgeons ever assembled in this state. The fact that 500 membership convention badges have been ordered is ample proof of the optimism of the association officials.

The program for the sixtieth meeting, under the capable direction of Dr. H. G. Steele, of Bluefield, is rapidly being whipped into shape and will be ready for publication in the June number of the *Journal.* The surgical section of this program was recently completed by Dr. D. M. Aikman, of Wheeling, together with the Eye, Ear, Nose and Throat section by Dr. C. B. Wylie of Morgantown.

The Midland Trail, rambling across the state from Huntington to White Sulphur and beyond, has never been in better condition, according to reports from the state road commission, and hundreds of West Virginia doctors are expected to take advantage of our scenic state highways in travelling to the convention. The paved road from Parkersburg to Charleston was completed last year, providing a direct connection with the Midland Trail in the capitol city. Members of the association from the northeastern section of West Virginia are expected to take advantage of the Shenandoah Valley route, recognized as one of the most beautiful drives east of the Mississippi.

The convention golf tournament, always a big drawing card and always hotly contested by the association members, will be held on June 20, the day preceding the opening of the general sessions.

Association officials have arranged to provide booths for exhibitors of medical appliances and equipment and a number of national corporations have already made reservations for these exhibits.

Mrs. B. S. Preston, president of the Woman's Auxiliary, recently stated that a large delegation of auxiliary members were expected and an order for 100 convention badges has been placed by Mrs. C. M. Scott of Bluefield, secretary of the organization. Mrs. Preston is now engaged in preparing the auxiliary program, which will also be published in the June number of the *Journal.*

Where the beautiful Greenbrier river winds down between the gaunt mountains of the Allegheny range, where the bridle-paths trail through nearby woodlands, where the stately Greenbrier Hotel stands leisurely amid great native trees,—that's where the members of the West Virginia State Medical Association will gather for their sixtieth annual meeting in June.

The wife of every member of the association should see that her husband attends the sixtieth convention and should make it a point to accompany him. Officers of the association have made special provisions for the entertainment of doctors' wives.

REPORTS FROM COMPONENT SOCIETIES

Mercer

The Mercer County Medical Society held its regular monthly meeting in the Director's Room of the Municipal Building, Bluefield, on February 24.

Dr. John McGuire read a brief, but interesting paper on "Some of the Advantages of the Sluder Operation in Children." He pictured clearly the advantages of doing the Sluder operation in selected cases.

Dr. Wm. D. Fitzhugh, of McComas, described a case of a boy with a foreign body in his throat, which was vomited up easily when the Doctor gave this patient a big

dose of syrup of ipecac. The boy had been eating peaches and a peach seed lodged in his throat.

In discussing Dr. Fitzhugh's paper, Dr. Charles St. Clair said he thought it was wrong to give the patient, choking, an emetic, just the same as giving a cathartic to the patient suffering with acute appendicitis. He said that procedure was dangerous. He described a patient he had seen, who swallowed a piece of beefsteak, which lodged in the oesophagus, and an emetic was given, and this became more compact where it was lodged. It was removed with a bronchoscope, being picked out, little pieces at a time, the beef having remained there until the patient was in a serious condition.

Dr. Kirk, in relating his personal experience, recited a case of a man who had been choked on a piece of beefsteak. He gave him diluted hydrochloric acid and pepsin and left it alone, which digested more or less the beefsteak, which terminated favorably. He related another case where one of our State auditors had a piece of turkey lodged in his esophagus. There were no eye, ear, nose and throat men in Bluefield at that time. He gave him a half a dozen raw eggs, and a dose of apomorphine, and the man vomited a three-cornered piece of turkey. He recovered nicely.

Dr. Blaydes gave an instructive talk on "Convergent Strabismus." He spoke on convergent and divergent strabismus, but laid more stress on the former. He said it was important that the general practitioner observe this early in the child's life and insisted that the condition be corrected in the third or fourth year, and not left until the seventh or eighth year, which would be too late. He said the child grows blind from non-use of the eyes, and that a cross-eyed man has a less chance to make a success in life. He said that blinds and glasses should be placed on the children early in life.

Under discussion, Dr. Rogers said that he gets the whole tonsil in this Sluder operation and nothing but the tonsil and that it leaves the pillars more intact, seeming to be the ideal operation in selected cases. He said that general practitioners should recognize cross eyes early and see that youngsters get their eyes corrected at the proper time.

Dr. Charles St. Clair said that the Sluder method was the ideal operation in selected cases. He also said that he enjoyed Dr. Blayde's talk on "Strabismus," squint or cross eyes, which is usually confined to one eye—only one eye that is crossed. Correct the error of refraction, which is most often at the bottom of the strabismus. He described thoroughly the action of the important muscles of the eye, and said that the eyes in any line would get a double vision. The most common is the convergent strabismus, which develops in early childhood. He also said that this can be overcome by proper application of glasses. It is a serious thing to allow an individual to lose an eye when it can be saved. He related where a woman had lost the vision of one eye on account of neglect. He said that he could not recall where a case of cross eyes had been referred to him by a general practitioner. He mentioned a case of a doctor's own child who had been neglected until it was five or six years old, and its vision was less than 20/200. He said to put the glasses on the child when it is two years old and it will gladly wear them.

The Secretary said he believed it was a valuable lesson to learn that children with convergent strabismus should be referred to a specialist in early childhood, and that practitioners should feel more keenly the responsibility in these cases.

Dr. Lepper's application for membership was accepted and ordered laid on the table for one month.

The Secretary read a letter from Dean Simpson of the West Virginia University, asking the society to endorse the bills now before the legislature, asking for an appropriation of $500,000 to establish a teaching hospital at the West Virginia University, whereby indignent persons, suffering from an ailment, medical or surgical, that can be cured or relieved, can be sent without cost for hospitilization, and that two other years be now added to the medical course, establishing in all, a four-year

medical school at the University. Dr. Kirk made a motion to endorse these articles of Dr. Simpson's, and go on record as being in favor of the establishment of a hospital and the other two years, making in all a four-year course at Morgantown, which was seconded by the Secretary, and after being discussed by Doctors St. Clair, Kirk, Rogers, Lepper, Steele and Fitzhugh, it was unanimously carried.

The following men were appointed by the President to put on the program at Welch, for the McDowell County Medical Society at their meeting, April 13th, 1927:

Doctors A. H. Hoge, R. O. Rogers, W. H. Wallingford and C. T. St. Clair.

It was the consensus of opinion that the Secretary write to Dr. E. E. Watson of Mt. Regis, Salem, Virginia, and invite him or some of his associates, to come to Bluefield and put on the program at the March meeting.

The following Doctors were present: Doctors Blaydes, Mastin, Rogers, Collison, St. Clair, Fitzhugh, Kirk, McGuire and Steele, members of the society, and Dr. Lepper, a visitor.

—H. G. STEELE, M. D., *Secretary.*

McDowell

Members of the Mercer Medical Society conducted a scientific program at the regular meeting of the McDowell Medical Society April 13, at the McDowell Country club, Welch, W. Va. A dinner preceded the scientific and business sessions and the attendance was large.

Central West Virginia

Officers of the Central West Virginia Medical Society for 1927 are: C. Fred Fisher, Richwood, president; M. T. Morrison, Sutton, vice president; S. S. Hall, Buckhannon, secretary-treasurer. Delegates to the sixtieth annual meeting to be held in White Sulphur Springs, June 21-23 inclusive, are Doctors Morrison and Hall.

The society membership this year is augmented by the addition of the Upshur County Society, the merger having been effected some time ago. Indications are that the rural counties in the central part of the State, including Upshur, Webster, Nicholas and Braxton, will have one of the strongest organization in the state association.

Quite a large delegation from these counties will attend the State meeting.

—S. S. HALL, M. D., *Secretary.*

Raleigh

The March meeting of the Raleigh County Medical Society was held in the annex dining room of the Beckley Hotel on March 31, 1927, at 8 o'clock with Dr. T. F. Garrett, president, in the chair. A smoker was enjoyed by the members present at the close of the regular program.

After a short business session and several case reports had been disposed of, the following papers were read: "Post Diptheritic Paralysis", by Dr. F. S. Harkleroad; "Hydrophobia", by Dr. M. S. Doak; "Puerperal Sepsis", and "Addison's Disease", by Dr. W. D. Simmons; "Hydrocephalus", by Dr. J. A. Campbell; "Pyloric Stenosis", by Dr. A. U. Tieche; and "Pyloric Spasm", by Dr. R. P. Daniel.

—E. S. DUPUY, M. D., *Secretary.*

Fayette-Raleigh

The Fayette and Raleigh County Societies met April 12 at Mount Hope, with a number of Kanawha county doctors who were also present. Dr. K. M. Jarrell of Beckley, was the principal speaker on the program, discussing the subject of diarrheal conditions in children. Others on the program were: L. F. Tully, Mount Hope; Dr. M. V. Godbey, McKendree; Dr. C. A. Morrison of New York, and Dr. A. A. Shawkey of Charleston.

Fayette

The Fayette County Medical Society held its regular monthly meeting at Mount Hope, Y. M. C. A. Building on April 12. The meeting was called to order by Dr. H. A. Walkup, president. Address of welcome was given by Mr. L. S. Tully of Mount Hope. Scientific program consisted of "Symposium on Pediatrics" as follows:

"Infant Feeding in Its Relation to Dis-

eases at All Ages", Dr. A. A. Shawkey, Charleston; "Some Thoughts on Acute Diarrheal Conditions in the Child", Dr. K. M. Jarrell, Beckley; "Acute Appendicitis in Children", Dr. Martin V. Godbey, of the McKendree Hospital, McKendree.

The society had as guests several members of the Raleigh County Medical Society, Dr. Morrison of New York, and Dr. John Thames, Kanawha County Health Officer, of Charleston.

In addition to the interesting discussions by the members of both societies of the papers presented that evening, Dr. Morrison gave an interesting talk on the "Immunization of Children Against Acute Infections, Measles, Scarlet Fever." Dr. Thames gave a talk on the relation of the health officer to the practicing physician.

Thirty-five doctors were present at the meeting, all entering into discussions and making the meeting an enjoyable one.

—G. A. SMITH, M. D., *Secretary.*

Parkersburg Academy

Doctor A. N. Frame's family has donated his entire medical library to the Academy of Medicine. It consists of 250 to 300 volumes.

Doctor William F. Reinhoff, Jr., of Baltimore, lectured recently on "Hyperthyroidism and Its Relation to Benign Tumors and the Thyroid Gland." It was one of the best ever heard here. At the meeting April 7, Doctor R. H. Paden read a paper on "Heart Disease in School Children."

Doctors H. D. Price, 66 years old, and C. W. Ailor, 69 years old, have been elected to honorary membership in the academy.

A delegation of at least 15 members will represent the academy at the sixtieth annual meeting.

Barbour-Randolph-Tucker

The Barbour - Randolph - Tucker County Medical society met in the Hotel Tygart at Elkins on April 20, 1927, at 6:30 o'clock. Following a dinner which was served to the members, the meeting was called to order at 7:30 o'clock by Dr. T. M. Wilson in the absence of the president.

A paper was read by Doctor W. S. Magill on "Prophylaxis and Treatment of Typhoid Fever." A communication from Dr. H. G. Steele of Bluefield was read which urged attendance at the state meeting at White Sulphur Springs on June 21-23 inclusive.

Those present were Dr. Wilson, Dr. C. B. Williams, Dr. B. E. Golden, Dr. E. R. McIntosh, Dr. S. G. Moore, Dr. A. S. Bosworth, Dr. O. L. Perry, Dr. T. M. Wilson, Dr. C. H. Hall, Dr. R. J. Detrick, and Dr. J. C. Irons. Dr. W. S. Magill of Morgantown was a society visitor.

GENERAL NEWS NOTES

DOCTOR KEEN ON SMALLPOX

Dr. W. W. Keen, Philadelphia, ninety-year-old dean of American Surgeons, contributed an article "Smallpox, a National Disgrace," to the *Review of Reviews* for February in which he brings out that next to India, the United States has more smallpox than any other country, exceeding that of European and Asiatic Russia; that in the year preceding June 30, 1925, the increase of smallpox was 75 per cent and the increase of deaths 628 per cent over 1923; that among the 4,000,000 American soldiers in the World War, there were but 979 cases of smallpox and but 15 deaths; that Massachusetts with 400,000 more people than California, but with smallpox law enforcement, from 1919 to 1924 had but 126 cases of smallpox against California's 26,651 for the same period. California had repealed the earlier laws enforcing vaccination. He concludes: "The experience of centuries and the common sense of every community should insist on universal vaccination."—*Nebraska State Medical Journal.*

KAHN TEST FOR SYPHILIS

Since the development of the Kahn Precipitation Test about five years ago, extensive studies in many laboratories have been carried out on this test in comparison with the Wassermann. These studies indicate that the Kahn test is in many respects superior to the Wassermann, being more specific for syphilis and more sensitive in the early primary and treated cases.

For the past few years studies on the Kahn test have been carried out in the laboratory of the West Virginia State Department of Health. These studies corroborated the findings of many other workers regarding the high degree of specificity and sensitiveness of the test. This test, furthermore, is less time consuming than the Wassermann, enabling the laboratory to make tests daily instead of three times a week.

Beginning with May 1 the West Virginia State Hygienic Laboratory will make daily Kahn tests on all blood specimens and spinal fluids sent for examination for the serum diagnosis of syphilis.

Dr. Charles E. Gabel, the laboratory director, has recently spent some time in Dr. Kahn's laboratory in Lansing, Michigan, in order to obtain the exact technique of the test as made there now.

The State Health Department urges the cooperation of physicians and invites them to send blood specimens for the serum diagnosis of syphilis with the assurance that the highest type of scientific service will be promptly rendered.

SUMMER CLINICS ARE ARRANGED IN CHICAGO

Announcements and schedules will soon be ready for the 1927 Summer Clinics of the Chicago Medical Society, supported by many of the largest hospitals in the city, among them being the Post Graduate Hospital, Chicago Memorial Hospital, University of Illinois College of Medicine, Cook County Hospital, Michael Reese Hospital, Mercy Hospital, Presbyterian Hospital, Jackson Park Hospital, St. Luke's Hospital, Ravenswood Hospital, Mount Sinai Hospital, Francis Willard Hospital, West Suburban Hospital, Evangelical Hospital, North Chicago Hospital, Chicago Lying-in Hospital, St. Joseph Hospital, Alexian Brothers Hospital, Laboratory of Surgical Technique, Washington Park Hospital, Jackson Park Hospital, Chicago Municipal Tuberculosis Sanitarium, John B. Murphy Hospital.

In 1926 registrations were limited to physicians living in Illinois, but increased facilities make it possible to accommodate many more than last year. Registrations therefore will be open to physicians from other states and to as many as may be accommodated, in the order of their registrations. Registration fee will be $10 for each two weeks course, payable at time of registration, and a physician may register for only one course of two weeks.

Admission will be by card only, issued by the Chicago Medical Society and no registration card will be issued until registration fee is paid.

The first two weeks course will begin on Monday, June 13, 1927, at 9 a. m., ending Friday, June 24.

The second two weeks course will begin on Monday, June 27, at 9 a. m., ending Friday, July 8.

HOSPITAL CONGRESS

The Hospital Clinical Congress of North America will be held in Milwaukee, Wisconsin, under the auspices of the College of Hospital Administration of Marquette University, June 20 to 24, 1927, inclusive. The Congress will be the first attempt to institute a practical hospital clinic and exposition demonstrating all departments of hospital work.

Dr. M. T. MacEachern, director of the American College of Surgeons, and Reverend C. B. Moulinier, S. J., president of the Catholic Hospital Association of the United States and Canada, recently made a tour of the entire North American continent conducting sectional hospital meetings in behalf of the Hospital Clinical Congress. Reverend Moulinier has reported that much interest was aroused among hospital people for hospital equipment and the uses and the procedure connected with the equipment.

Arrangements of clinics for the Congress, according to a recent bulletin, will be under

the direction of Dr. MacEachern and the individual clinics will be conducted by specialists chosen from among the outstanding leaders in the respective departments to be demonstrated. The clinical feature will predominate all sections and groupings, it was stated.

CRIMEAN WAR SURGEON BURIED IN MORGANTOWN

At a meeting of the Monongalia County Medical Society April 8, Dr. W. C. Kelly, honorary member of the State Association and president of the County Historical Society read an interesting paper on Dr. James B. P. Hank, formerly a citizen of Morgantown, and who is buried in Oak Grove cemetery. The text of the paper is as follows:

Probably there is no member of our profession who does not remember back to his school days, the great impression and popularity of the poem, everywhere found in the school speakers of the time, and entitled "The Charge of the Light Brigade," reciting the heroic advance of that immortal six hundred.

Every military history recounts it, and throughout the world we find it, coupled with Von Moltke's famous comment, "Magnificent, but it is not War."

In our minds that event is almost solely responsible for our recollection and actual knowledge of the Crimean war; but we have here in Morgantown a much closer bond of interest for all of us and most particularly for the members of our profession, of which one was directly engaged there.

In the Oak Grove cemetery, about midway, at its extreme southern border; close to the tomb of our distinguished citizen—the late George C. Sturgiss—stands the modest stone shaft to the memory of Dr. James B. P. Hank, bearing on the southern—which is the front—face and just below a cut insert space for a portrait (as is customary for all monuments in Russia) this inscription:

BORN September 15th, 1829.
DIED June 16th, 1859.
"His dying words were
'Home at Last'"

And on the eastern face:

Graduated in 1848
At Dickinson College, Pa.
Was a Surgeon in the
Russian Army, during the
Crimean War, 1854-56.
Visited Palestine and
Egypt—Returned to the
United States in 1857.

This monument was called to my attention recently by Dr. William S. Magill—our colleague—who served with the Imperial Russian Army, 1914-17, and with the rank of Lieutenant General, commanded the medical service of the 3rd Army throughout the campaign in Galicia.

Until then, I had no knowledge of this Dr. Hank, and had not included his, in the list of names and sketches of the medical men of Morgantown since its foundation which I had compiled for publication; but it will now be included there.

Careful inquiry reveals that this surgeon was well known here, where he came on his return from this European adventure, joining his brother, at the time principal of the Morgantown Female Seminary; and I also find that Dr. Hank was a close personal friend of my brother-in-law, E. C. Wells, from whom I have secured these details and a daguerreotype, which Dr. Magill has had copied by Photographer Gibson; and with these photographs is replacing in its proper setting in the monument, the picture of Dr. Hank; of which copies are now offered in homage to this County Medical Society, and a further copy to our Historical Society.

As you will see from this portrait, Dr. Hank was a handsome man, with very bright, intellectual face, with just that dash of poetic impulse which would carry him on

the great adventure. Many of his jokes and anecdotes of his sayings and doings are still well remembered and recounted here by his friends and give evidence of his gay and attractive disposition. He was never tired of relating his adventures which for that time were indeed most remarkable. Who would ever have dreamed, that a young medical man of that period would have reached such far off point as the Crimea? and to have there so distinguished himself as to have been a surgeon in that great Imperial Russian army and in that campaign which has become world famous for the strategic strength, indomitable courage, ability and skill of the Russian resistance to the great military powers of France, England and Turkey, so closely allied against her.

It is of great interest now with this direct connection of ours through Dr. Hank, to reread the military history of the Crimean war and the description of that impressive cemetery of its defenders that Russia has made of Sebastopol. It is known as one of the most remarkable achievements, an almost unbelievable military feat; the creation and fortification of this Sebastopol while all of the time under the direct attack and bombardment of its allied enemies; a feat that has made the name of its defender—Todtleben—adored throughout Imperial Russia and admired by the whole world. Under such a commander and with such heroes in this world famous defense our Dr. Hank was serving; and in placing our wreath upon his tomb here, let us recall that great cemetery of Sebastopol, where our local hero has also his right of burial. Let us for a moment view this cemetery, as it lies upon the southern slope of the peak that was crowned by the fortress. Note at its great portal the view of the unending lines of simple graves, directly in front and in the centerline of which is the magnificent tomb of their intrepid commander, Todtleben, with its world known inscription, as expressed in his will to be buried there; of which the free English translation is as follows:

"Let me be buried at Sebastopol, in the midst of its heroic defenders, who never allowed the foot of the enemy upon the soil of their country, save over their graves."

To our colleague, Dr. Hank, the comrade of these heroes to whom the great Czar of Russia erected this eternal tribute of Sebastopol, we offer here our united tribute and honor to his glorious career.

At the time of his death, Dr. Hank was buried in the old cemetery, now the site of our present University. It was during this period that the glass, protecting his inset picture, on the monument was broken, permitting the destruction and loss of the picture which is now replaced.

When the bodies were removed from their original resting place, that of Dr. Hank was re-interred in its present grave, with the original monument at its head, at the foot of which is a small marking stone inscribed with his initials.

Dr. Hank died of tuberculosis, June 16th, 1859, aged 30 years at the home of his brother, the Rev. A. S. Hank, who at the time lived in and was principal of the old female seminary, which stood on the lot on High street, just south of the present Presbyterian church, and which was destroyed by fire in 1889.

Dr. Hank, I find, is well remembered by a number of our older citizens; namely: Mrs. Elizabeth I. Moore, Miss Callie Hagan, Mrs. Kate Johnson, Edgar C. Wells, John B. Willey, Thornton Kern and perhaps a few others.

It is understood that the family of Dr. Hank (his father and mother as well as his brother were here at the time) came here from the Valley of Virginia, near Martinsburg, W. Va.

I am endeavoring to obtain any possible details from Dickinson College records, and also from one of our citizens who was a friend of a daughter of the Rev. A. S. Hank, who is still thought to be living, and can possibly furnish us with further details of Dr. Hank or members of his family while here.

J. H. Morgan, of Dickinson College, writes us under date of April 4th, 1927, that their records can only contribute that Dr. Hank was born in Harrisonburg, Va., September 15, 1829; was graduated with the degree

of Bachelor of Arts, in 1848; and they confirm his service as surgeon in the Russian army during the Crimean war. It is also noted that Dr. Hank was a member of their Union Philosophical Literary Society.

CURRICULUM FOR NURSES SHOWS TRAINING HOURS

For the benefit of West Virginia hospitals and the membership at large, we are publishing here the curriculum for nurses showing the hours of work in the three years of training as follows:

Probationary period and first year—

	Hours
Practical nursing procedures	110
Anatomy and physiology	75
Drugs and solutions	24
Materia medica continued	40
Ethics and history of nursing	18
Elementary dietetics	8
Bandaging	12
Hygiene and sanitation	15
Chemistry	20
Intermediate year—	
Dietetics	36
Surgical diseases, including gynecological orthopedic nursing	24
Obstetrical nursing	20
Bacteriology, including simple laboratory procedures	18
Operating room technique	10
Massage	20
Psychology	10
Senior year—	
Medical nursing	25
Anesthesia	2
Laboratory diagnosis	8
Obstetrical nursing	12
Nervous and mental diseases	5
Pediatrics	12
Eye, ear, nose and throat	8
Advanced ethics	6
Special topics and review	12

THE MEDICO-LEGAL STATUS OF THE PHYSICIAN *

By JUDGE H. ROY WAUGH
Elkins, W. Va.

A physician is one lawfully engaged in the practice of medicine and surgery. Under our statute the term "practice of medicine and surgery" is construed to be the treatment of any human ailment or infirmity by any method; and to open an office for such purpose or to announce to the public in any way a readiness to treat the sick or afflicted, shall de deemed to engage in the practice of medicine and surgery. (*Code Chapter* 150 *Section* 8A).

At common law there were no specific requirements for the lawful practice of medicine and surgery. The requirements of the present day arise under statute, and it is well settled that under its police powers, that is to say, under the power of government inherent in every sovereignty, there is vested in the state the power to make and enforce laws for the protection of life, limb, health and comfort of its people, and that reasonable regulations for the examination and registration of physicians violate neither the federal nor the state constitution. (*State v. Dent* 25 *W. Va.* 1.); (*State v. Morrison* 96 *W. Va.* 674).

Under the West Virginia statute which has been construed by the courts as a reasonable regulation, the following persons only are permitted to practice medicine in this State:

(1). All such persons as were legally entitled to practice medicine on the 12th day of April, 1923, the date of the passage of the present statute.

(2) All graduates of Class "A" medical

* Read before the Barbour-Randolph-Tucker Medical Society at Elkins, W. Va., February 17, 1927.

schools as classified in accordance with the statute, where such schools so classified require as a condition to entrance upon the study of medicine at least two years of academic work of collegiate grade in a standard college of arts and sciences of equal rank with the college of arts and sciences in the University, who shall pass an examination before the public health council, and shall receive a certificate of license to practice medicine. Such certificate may also be granted, without examination, to those legally licensed to practice in another State where the standard of qualification to practice medicine is equivalent to that of this State, and where such other State accords a like privilege to the licentiates of this State. (*Chapter* 150 *Sec.* 9). The council may refuse a certificate to one guilty of malpractice or dishonorable conduct, and may revoke such certificate for like causes, and an appeal may be had from the order of revocation to the Circuit Court of the County in which the holder of the certificate resides. Any person who shall practice or attempt to practice medicine or surgery without a certificate shall be guilty of a misdemeanor.

These are the requirements necessary to give the physician a legal status as such under the laws of the State. It is interesting to note in passing that before one can be licensed to practice law, in addition to his educational requirements, he must upon a hearing before the County Court of his residence prove to its satisfaction that he is of good moral character, and secure the entry by the Court of such a finding. Even to be commissioned a notary public one must obtain from the County Court a certificate of good moral character, but for the licensing of the physician no such certificate or finding as to moral character is required. He may be refused a certificate of license, or that license may be revoked,for malpractice or dishonorable conduct only.

Once having entered upon the practice of his profession, the physician finds himself in a new relationship, that of physician and patient. By this law relation the physician is placed in a position of trust and confidence, and his opportunity to influence the acts of the patient is unusual. While called upon for professional services he is incidentally in a position of advantage non-professionally. In view of the facts that the relation is one of trust and confidence, and a patient in ill health is more easily subject to the influence of another, it is held that all non-professional relations between the two will be closely scrutinized by the courts. A gift from patient to physician, for example, is subject to the suspicion that exists wherever a gift is made to and in a confidential relation to the giver, and if contested, the burden is upon the physician to show fair dealing and no undue influence. (21 *R. C. L.* 377).

The obligation of the physician to his patient flows not necessarily from contract but from the relation and that relation exists only between the person actually giving the medical attention and the person actually receiving it, and whether or not the relation exists is a question to be determined from the facts. (21 R. C. L. 376). We are quite sure that medical services are not generally rendered under an express contract or agreement. When Smith is sick or injured he calls a physician; the physician responds to the call, makes a diagnosis and prescribes a treatment. Smith's call is an offer to be treated by the physician, and the physician's response, diagnosis and treatment are an acceptance of that offer, and the relation of physician and patient is formed, which relation implies an obligation on the part of the physician to treat properly the patient, and an obligation on the part of the patient to pay the physician for the services rendered a reasonable compensation in the absence of a specified agreement, or the stipulated amount, if there is such agreement.

The usual action at law growing out of this relation, is that of the patient against the physician for malpractice. Malpractice is usually defined as the bad or unskillful practice of a physician resulting in injury to the health or limb of patient, and is divided by some authorities into three classes;

(1). Wilful malpractice, which takes place when the physician purposely administers medicines or performs an operation which he knows, or reasonably must expect, will result in injury or death to the individual under his care; as in cases of criminal abor-

fact must be determined and that persons having knowledge of matters that would aid in the development of these facts shall be compelled to testify as witnesses. It is the duty of the citizen on the one hand to lend his support to the prosecution and suppression of crime; on the other hand he is just as clearly charged with the duty of seeing to it that one accused of crime, regardless of his station in life, shall have a fair and impartial trial. We are all mutually dependent upon each other for that security and protection which are essential to the enjoyment of the life, liberty and pursuit of happiness, guaranteed by the Constitution. If we are deprived of the aid and assistance of those who can speak the facts, then life, liberty and property are empty words. The duty to aid others in the maintenance of their rights arises from the relation we must bear one to another as members of society or the same community. A particular case, civil or criminal, may be petty, and the verdict of the jury of little importance to the immediate litigants, but we must not overlook the fact that all society is vitally interested in every case. While an unfair verdict may be of little consequence to any party to the case, it is nevertheless a defeat of justice, a prostration of society, which if continued results inevitably in its dissolution.

A plaintiff may be interested in obtaining from a witness certain facts most favorable to his contention, the defendant certain other facts favorable to his defense, but society exacts from the witness a solemn oath or vow, that he will speak the truth, the whole truth and nothing but the truth, so, to testify is not to be considered merely a matter of aid or accommodation to a friend or an embarrassment or detriment to an enemy, but primarily as a duty to society—from the standpoint that the community has a right to demand that justice be done in all cases. So, back of the active litigants, a silent party as it were, stands the community vitally interested in the administration of justice and justice cannot function so long as material facts are concealed.

In certain jurisdictions a physician is restrained from testifying, except as to facts acquired in a non-professional capacity. In such jurisdictions all knowledge acquired by him in the course of his professional duties is privileged and cannot be given in evidence without the patient's consent. These statutes are designed primarily to encourage and enable the patient to disclose to his physician fully and freely his condition with the assurance that no information so given can thereafter be used to his annoyance, damage or disgrace. It should be said that the purpose of such statutes is not to show any peculiar respect entertained by the law for the profession, but to protect the patient on the gound that the injury to the patient would be greater from a disclosure of such information than would be the benefit to society.

An affirmative answer to the following questions is necessary to make such a communication privileged. Does the communication originate in a confidence? Is the inviolability of that confidence vital to the due attainment of the purposes of the relation of physician and patient? Is the relation one that should be fostered? Is the expected injury to the relation, through disclosure, greater than the expected benefit to society?

In a discussion of the privilege, an eminent authority (Wigmore) says: "In only a few instances out of the thousands daily occurring ,is the fact communicated to a physician confidential in any real sense. Barring the facts of venereal disease and criminal abortion, there is hardly a fact in the categories of pathology in which the patient himself attempts to preserve any real secrecy. Even where the disclosure is actually confidential, it would none the less be made though no privilege existed. People would not be deterred from seeking medical help because of the possibility of disclosure in court. If they would, how did they fare in the generations before the privilege came? Is it noted in medical chronicles that, after the privilege was established in the State of New York, the floodgates of patronage were let open upon upon the medical profession, and long concealed ailments were then for the first time brought forth to receive the blessings of cure? And how is it in those jurisdictions where no privilege exists,—does the medical profession in one-half the union enjoy in a marked way an afflux of confidence con-

tion. Our statute provides that "any person who shall administer to, or cause to be taken by a woman, any drug or other thing, or use any means with intent to produce abortion shall be guilty of a felony and punished by confinement in the penitentiary. But such act is *not* punishable *if done in good faith* with the intention of saving the intention of saving the life of such woman or child. (*Code Chapter* 144 *Sec.* 9).

(2). Negligent-malpractice, which consists of gross negligence in giving that attention which the patient requires, but where there is no criminal or dishonest motive; as in cases where a physician while in an intoxicated condition administers medicine or gives treatment that results in injury to the patient.

(3). Ignorant malpractice, which is the administration of medicines or surgical treatments, which are calculated to do injury and which a physician with a proper degree of training and skill would know are not proper in the case.

A study of the cases reported shows that the usual grounds for recovery in suits by the patient against the physician in malpractice cases are negligence and want of skill in the treatment of the particular case. The law as to the care and degree of skill required on the part of the physician is well settled in West Virginia. Our court holds (*Dye v. Corbin* 59 *W. Va.* 266; *Browning v Hoffman* 86 *W. Va.* 468) that:

"A physician is not required to exercise the highest degree of skill and diligence in the treatment of an injury or disease unless he has by special contract agreed to do so. In the absence of such special contract he is only required to exercise such reasonable care and ordinary skill and diligence as are ordinarily exercised by the average members of the profession in good standing, in similar localities and in the same general line of practice, regard being had to the state of medical science at the time. Where a physician exercises ordinary skill and diligence, keeping within recognized and approved methods, he is not liable for the results of a mere mistake of judgment. A physician is liable for the result of an error of judgment, where such error is so gross as to be inconsistent with that degree of skill which it is the duty of a physician to possess. If there are two or more approved methods of treatment of an injury of the kind committed to his care, he may adopt the one which, in his honest opinion, will be the most efficacious, and appropriate under all the circumstances, and in such case he is not liable for any injury resulting from an error in his judgment, if there be one. He is not bound at his peril to adopt the best method. Failure on the part of a physician to effect a cure does not, alone, establish or raise a presumption of want of skill or negligence on his part. A physician does not warrant or insure that his treatment will be successful, in the absence of special contract to that effect.

It is further held that when a physician is employed to attend upon a sick person, that employment continues while the sickness lasts, unless put to an end by the assent of the parties, or revoked by the express dismissal of the physician. In the absence of special agreement his engagement is to attend the case as long as it requires attention, unless he gives notice of his intention to discontinue his visits or is dismissed; and he is bound to exercise reasonable and ordinary care and skill in determining when his attendance should cease. Improper abandonment of a patient may be cause for recovery of damages for malpractice. On the contrary, it is the duty of the patient to cooperate with the physician and to conform to his prescriptions and directions, and if he neglects to do so, he cannot hold the physician responsible for damages for his own neglect.

In case a physican has assumed obligations to different persons, the performance of which may become incompatible, that is, if one patient requires his attention at a time when he cannot leave the other patient whom he is attending, his liability would logically depend on whether he was duly careful on entering both relations, and whether by the exercise of due care and foresight he could have anticipated and provided for such an emergency.

The Physician As A Witness

Public justice requires that in the orderly administration of the laws, certain issues of

trasting with the scanty revelations vouchsafed in that other half where no privilege protects? If no difference appears then the reason for the privilege falls away; for it is undoubted that the rule of privilege is intended not to subserve the party's wish for secrecy as an end in itself but merely to provide secrecy as a means of preserving the relation in question whenever without the guarantee of secrecy the party would probably abstain from fulfilling the requirements of the relation."

Unless the statute in express terms limits the privilege, it applies to criminal as well as to civil cases. An examination of reported cases shows that courts have often been forced to place upon these statutes judicial limitations, more or less strained, in order to prevent their evil effects in the trial of criminal cases. The advisability of such statutes has been many times questioned. The abuse of the privilege is often apparent—sometimes absurd.

But it is to be remembered that at common law the communications of a patient to his physician are not privileged; and the constitution of the State of West Virginia provides that "such parts of the common law, and of the laws of this State, as are in force when this article goes into operation, and are not repugnant thereto, shall be and continue the law of the state until altered or repealed by the legislature." (*W. Va. Con. Art. VIII Sec.* 21). And declaratory of this constitutional provision the Legislature has enacted (*Code Chapter* 13 *Sec.* 5) that "The common law of England so far as it is not repugnant to the principles of the Constitution of this State, shall continue in force within the same, except in those respects wherein it was altered by the general assembly of Virginia before the twentieth day of June one thousand eight hundred and sixty-three, or has been or shall be altered by the legislature of this State."

An examination of the acts of the assembly of Virginia prior to 1863 and the acts of the legislature of West Virginia subsequent to that date, discloses no statute making the communications between the physician and his patient privileged, except in trials before Justices of the Peace. So, in the courts of this State, such communications are admissable. Another statute, (*Code Chapter* 130 *Sec.* 23) provides that "Where an action is brought for causing the death of any person by wrongful act, neglect or default, * * * * the physician sued shall have the right to give evidence in any case in which he is sued; but in this event he can only give evidence as to the medicine and treatment given to the deceased, or operation performed, but he cannot give evidence of any conversation had with the deceased." This provision is an amendment to the statute which prior to that time made incompetent the testimony of a party interested in the result of the suit as to any personal transaction or communication between him and a person deceased at the time of his testifying. Prior to this amendment the testimony of a physician who had been sued for the wrongful death of another was inadmissible for every purpose. It will be noted however, that the question of privileged communication is not involved. A physician was not prohibited by the original statute from testifying on the grounds that his communication was privileged, but because of the prohibition against his testifying where he was a party to the suit. Otherwise than as here noted the common law governs as to the admissibility of the testimony of a physician in West Virginia courts, and no privilege at common law existed between physician and patient.

Expert Testimony

In general, evidence in a case is limited to a presentation of the facts, that is to say, the facts presented constitute the evidence in the case, and the jury reaches its conclusion from these facts. However, where the facts presented are of such a nature that unskilled men constituting a jury would be incompetent to form as accurate and reliable opinion upon the subject matter of the testimony as persons who have special knowledge of the subject because of their learning, profession and experience, then an exception to the general rule exists and those having such special knowledge are permitted to give in evidence their opinion as experts. (*State v. Wilson* 74 *W. Va.* 772; *Railroad Company v. Christian* 83 *W. Va.* 701). But expert testimony will not be received to prove or disprove those

things which lie within the common experience and common education of all men. (*Wharton on Evidence* 436; *Johnstown v. Mack Company* 65 *W. Va.* 544).

An expert is a person who possesses peculiar skill and knowledge upon the subject matter on which he is called to testify. (*Underhill on Evidence* 185). The diagnosis, cause and effect of disease or injury to the human body, and kindred matters of medical practice, constitute a most important field of expert testimony. But I shall deal in this paper only with the *duty* of the physician to give expert testimony, and his right to *compensation* for such services.

Just as physicians differ in their opinions so have courts differed on these subjects where they are not bound by statute. One line of decisions sustains the proposition that an expert can be required to testify without extra compensation; that it is a duty that he owes to the law which protects him in the practice of his profession; that he like any other citizen ought to contribute his aid to secure and advance the proper administration of justice; that the receipt of large sums as compensation may bias him as a witness and lessen, if not wholly destroy, the value of his testimony as a guide to truth. Another line of decisions holds that the expert ought, of course, to testify to those facts within his knowledge, which he has acquired by the means that are open to the ordinary witness, without extra pay; but that in giving a professional opinion on the witness stand, he is employing professional qualifications, which it has taken years of study to obtain and that to compel him to divulge his opinion gratis is an unjust appropriation of his property, without compensation. It is the opinion of a writer on medical jurisprudence (*Ordronaux Medical Jurisprudence* 144) that when placed upon the witness stand as an expert, the physician's obligation to the public ceases, and he stands in the position of any other professional man whose opinion is desired; that his skill is his capital and he cannot be required to bestow it on any party without compensation.

But the general rule in the courts of this country is a compromise between the two extremes just indicated,—an expert in the absence of a statute stands the same as any other witness. He is not because of his skill relieved from the usual duties and obligations of citizenship. He may be compelled to testify and give his professional opinion, without extra pay, though the knowledge upon which he bases that opinion may have been acquired through long study and the practice of his profession, but he cannot be required to make special examination, engage in experiments, or make other preparations in order to qualify himself to testify in a particular case. (11 *R. C. L.* 648). For example, if in a trial of a case, it is material to show that the dwelling of A stands on the south side of a certain road, B may be summoned as a witness to show that fact, but if he is without that information he cannot be required to visit the premises and ascertain the fact in order to qualify himself. So, a physician called to treat a patient professionally can afterwards be compelled, without extra compensation, to testify not only as to physical facts observed by him, but as to any opinion formed by him, but he cannot be required to make examination or preliminary preparation in order that he may be able to give his opinion as an expert.

There is often necessity for the opinion of a physician in the trial of cases both civil and criminal. If in order to supply that testimony a physician is employed to make examination and preparation, he can without just criticism receive pay from the party employing him for any and all his professional services in making such examination and preparation, but as a witness he should receive no extra compensation. Under the West Virginia statute he can be allowed no extra compensation.

If A in the case indicated has no witness available to show that his dwelling is on the south side of the road and the showing of such fact is necessary in his case, there is no reason why he should not employ B to go upon the premises and acquaint himself with the fact, and pay him a reasonable compensation for that service, and under such circumstances B's testimony should be received with full credit, if he is otherwise credible; but if it appears that B has been paid an unusual sum for his services and in addition is re-

ceiving a fee as a witness, largely in excess of the legal fee, then we most naturally treat his testimony as biased in favor of A who has employed him. The weight of expert testimony under a like showing will be judged in the same manner.

There is a vast difference in the weight of the testimony of the man who poses as an expert for expert fees, and the man who has prepared himself primarily for the work of his profession and is only incidentally called upon for an expert opinion. The public does not look with great favor upon the testimony of the so-called medical expert witness. We have had too many exhibitions in the country at large of this expertness, cases where it was perfectly apparent that difference of opinion resulted from difference of employment; that the opinion of the witness was the opinion he had been employed to give. Such exhibitions are no doubt responsible for the wide-spread sentiment, and the statutes already enacted in some States, to subject the whole matter of expert testimony to statutory regulations, prohibiting special private employment and regulating the compensation. And much to their credit, it may be said that the bona fide physicians of the country with great unanimity favor such legislation.

Speaking of the physician as a witness, it is generally observed that he is as a rule rather reluctant to testify. Much of this reluctancy or hesitancy is no doubt traditional, dating back to the Hipprocratic oath promulgated by Hippocrates more than fifteen centuries ago, or the graduation oath formerly required in certain European Universities. The Hippocratic oath concludes, "Whatever in connection with my professional practice, or not in connection with it, I see or hear in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret." And the graduation oath reads, "Finally, that I will not without a serious reason divulge those things which are seen or heard in the course of my practice that it is proper to keep secret." These oaths constitute a code of ethics that should be emulated by every physician. To maintain a respectable position in his profession, and a profession that is to have the respect and confidence of the public, the physician cannot be a busybody, going about telling what he has no business to tell, but his code of ethics which requires that he shall not go about talking promiscuously of his patients, their diseases and ailments, must not be construed as affecting an excuse for refusal or reluctance to testify when called upon in a court of law. Even under the oaths quoted, he can discharge his duties of citizenship with no breach of ethics.

This reluctance to testify may be due to the further fact, generally conceded, that physicians and lawyers make the most unsatisfactory witnesses. An eminent writer on medical jurisprudence (*Smith Med. Jr.*) says, "It has become a reproach to the profession that some medical witness can always be obtained to testify to the possibility of any fact however improbable, to any theory however devoid of foundation, and to any opinion however extravagantly wild." It is but natural that such a witness will be subjected to the severest cross examination.

A court rather expects a clash between counsel and witness whenever a physician is called to the stand. Why this clash? When a physician investigates his "case" everything is evidence, every circumstance no matter how it may come to his attention; he reasons from signs and symptoms; his conclusions are probable, difficult to verify, and they seldom amount to more than a reasonable degree of certainty; while the law, especially in criminal cases, is strict, requiring proof beyond a reasonable doubt. The medical mind is, by training, antagonistic to the logic of law. The physician resents the refusal of the lawyer to accept his assertions as facts; his beliefs as proofs. He overlooks the fact that he is now in a court of law where fact, not assertion nor belief, is evidence. Another weakness from which the physician suffers as a witness is his natural disposition to be an advocate. Seldom does a physician as a witness fail to manifest his personal interest in the case on trial.

So much for my subject. A member of your Society, upon learning that I was on the program for this meeting, wrote me, suggesting that I tell the profession of its shortcomings,—its faults; why the public will not listen to the medical man. In reply to that

friendly challenge, may I make these observations? The attitude of the public towards the professional man and his work affords interesting study. The medical profession is not the only one that suffers from an indifferent or antagonistic public.

The most illiterate will proclaim the necessity of education; schools are established and maintained at public expense, yet it takes a compulsory attendance law and an army of officers to get their children in school and keep them there.

The preacher, the priest and the rabbi spend their lives in showing us the right way of life; we admit that their teachings are correct, yet many ignore them and their teachings and go to the devil.

The title to property can be ascertained under the law; lawyers are ready to serve the purchaser and see that title is good, and the deed of conveyance sufficient. Yet a man will invest the savings of a life time in a home, taking the word of those who cannot know as to title, and accepting a deed drawn by a notary, justice of the peace or some other, who does not know the first essential of a good and sufficient deed. He later awakens to the fact that he holds under a deattained, but the necessary element of cooperation is lacking.

We have observed that in carrying out its program, the men of any particular profesfective deed or a defective title, and that his earnings have been squandered.

The physician advises us that a certain disease, typhoid fever, for example, is avoidable and points out to us the way to avoid it, yet epidemics of the disease continue to break out and take their toll of human lives.

These professions are ready and willing to co-operate,—the teacher, in the education of the youth; the clergy in correct living and the salvation of the soul; the lawyer in the security of property, which supports life itself; and the physician in maintaining life and health. Yet due to thefailure of a laity to join in that co-operation we are daily confronted with illiteracy; lives dissipated and broken, and souls lost in sin; old men working in the ditch who should be living at ease and in comfort; and cemeteries filled with the victims of a preventable malady. All concede that the end is attainable and should be sion have learned that the first, readiest and most willing support can be expected from the men of other professions. Next we may expect those who might be called the successful business men,—these, through a closer contact with the professional man, have learned to trust and co-operate with him; their business success may be due in a large measure to advice taken from men of the professions.

The Superintendent of the City Schools desires to increase the educational facilities. His first appeal is to the doctors, the lawyers, the preachers and the leading business men. A physician wants to put on a health campaign,—his first appeal is to the same people; but when the business man aligns himself with the progressive thought of his time, he soon discovers that he has alienated, to some degree at least, the relationship that hitherto it may be, across to the mind of an ignorant man; he is usually very conceited as to his may have existed between him and those with whom he may have been identified. His *trust* in the professional man may result in his being *distrusted* by those who belong to the class that brand the doctor as a faker, the lawyer as a crook, the preacher as a four-flusher, and the successful business man as a thief. The difficulty with this class is that it is ignorant of the work of the professional man, and because of that ignorance it becomes antagonistic to him and his work. Let some loud mouthed reprobate, for instance, blow into a community, announce himself as a wandering evangelist, deliver a few harangues against the churches of the community, and by this class he will be hailed as a wonderful preacher. He may be unable to read or converse on the most commonplace subject, intelligently, yet if he can storm the church and an educated preacher, his words will be received as inspired and he will get a following of his kind.

The physician advises vaccination,—the same ignoramus who has always argued that the world is square, now has a new argument against vaccination, and it is surprising to see how effectually with his class he can thwart the plan of the doctor. It is always difficult to get a new idea, no matter how meritorius

own opinion. As to medicine he prefers as a physician one who has not been spoiled by an education, and new fangled ideas. So he quite naturally patronizes the quack doctor.

Then our conclusion is that the fear and distrust of the laity growing out of its lack of knowledge of the aims, purposes and ability of the professions, especially the medical profession,—ignorance of what it means and has attained, is the great barrier to co-operation on the part of that laity. This is the situation as I see it from the standpoint of the physician.

Then viewed from the layman's standpoint what are some of the obstacles to co-operation? The layman sees the profession divided into three distinct classes,—the physician, the shyster and the quack. The quack concededly knows nothing of the science of medicine; the shyster without character or ethics and for pecuniary gain appeals to the unadvised and in order to hold and profit by their ignorance is always ready to condemn any advanced position taken by his profession. He may know something of disease and medicine but he fails to keep abreast of the advancements of his profession; he knows nothing of vaccine, serum or antitoxin, and if these are accepted by the public he well knows that his services will no longer be required so in order to protect himself he confirms the suspicion of the public in all new ideas of practice and treatment of disease and becomes a distinct menacing force in the progress of the prorfession. We have done under the law all that can well be done to eliminate the quack, but the shyster presents a problem difficult of solution,—and a solution that in my opinion is up to the profession.

Then a little more frankness on the part of the general practitioner would accomplish much towards gaining and retaining more of the public confidence. He knows that there are many diseases and ailments that he cannot treat successfully, yet with knowledge of the fact that he can accomplish nothig, he may go on treating these chronics for years rather than tell them in the beginning, as he should do, that their case is one for a specialist. He would gain much for his own and the prestige of his profession if he would tell such patients frankly that he could do nothing for them. But he accepts a case, accomplishes nothing, and is discredited as a physician. Another mistake that the physician sometimes makes is that of failing to manifest proper interest in a case that he has accepted for treatment. Nothing will create a greater respect for the physician and more confidence in him than to have the patient feel that the physician has a further interest in the case than the mere collection of a fee. Just a little more sympathy, a little more personal interest, a little closer touch will help to break down the barrier and bring about a better understanding. Even the ignorant will yield when convinced that the professional man has a personal as well as a professional interest in their welfare; in fact I know of no other approach so effective.

Then, by way of constructive criticism may I ask, is it true that the worst enemy of the profession is to be found within its ranks? Is the laity accustomed to hear one practitioner criticise and condemn a fellow practitioner professionally? Is it true that the failure of two physicians to agree as to ailment or treatment in a particular case becomes public knowledge and the subject of street corner discussion? Do disagreements professionally become disagreements personally? Is the public warranted in a feeling that there is little intercourse of thought or ideas between and among you? If the answer is in the affirmative then, gentlemen, these barriers between you and the public can only be removed by you.

Remember that there is no point of contact between the discoveries of the laboratory and the patient to be benefitted thereby other than the physician, and if your offer of cure is received and accepted, it will be due largely to the fact that the beneficiaries of that cure have confidence in you as men which has in turn begotten confidence in you as physicians; so after all, while the principle may not be accepted by you as sound, either ethically or theoretically, I believe that confidence in the profession is predicated upon confidence in the individual members of the profession as men, and that confidence in you as men will be increased by a closer touch and fellowship with your fellow man.

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COMPLICATIONS OF EAR DISEASE *

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IN CONSIDERING the complications which may possibly arise in connection with disease of the ear, it may be convenient to divide them into two classes: those which occur in connection with a pathologic condition which involves the external ear, and those which take their origin from a disturbance of the internal portions of the auditory apparatus.

The first class may be dismissed in a few words. Perichondritis is perhaps the most frequent complication encountered in relation to external ear affections, and may follow injuries induced by trauma, burns, frostbite or injury by chemicals. The outer ear is often involved in diseases which attack the cutaneous covering of the head, such as erysipelas, eczema or occasionally epithelioma. There are, likewise, diseased conditions of the bone, and deformities, both congenital and acquired, which may present serious complications, and frequently leave the pinna in such a condition that it can only be restored to anything approaching normal by prolonged and expensive plastic procedures. A description of such remedial measures is beyond the scope of so brief a paper as this. In general, it may be said that any of the aural complications affecting the outer ear alone are handled in the same manner as those of similar nature occurring elsewhere, perichondritis or epithelioma for example being in no wise different from the same conditions in other parts of the body.

Coming now to the various complications which are likely to present themselves in connection with middle ear disease, we are at once brought to a realization of the very close connection existing between the nose and its accessory sinuses and the inner portion of the auditory apparatus, as well as the likelihood of any severe infection which originates in either ear or nose quickly in-

* Read before the Tri-Co Medical Society, October, 1926.

vading the other sense organ, and the very great danger that any such condition may rapidly involve the brain. Even yet the general public, and unfortunately also, a very considerable proportion of the general practitioners do not realize how serious any affection in either ear or nose may readily become, and it is to this attitude of carelessness and indifference on the part of so many patients and their usual medical attendants, that many of the grave and even fatal complications with which the otologist is called to deal, should rightfully be charged.

Perhaps the most common—but none the less grave—condition that gives rise to numerous complications, is *tympano-mastoid disease,* a condition which may be included in aural affections although the mastoid cells themselves are related to the ear in much the same way that the sinuses are to the nose; thus they may be considered in connection with ear diseases, even if not strictly speaking a part of the mechanism of hearing.

Labyrinth involvement is very commonly subsequent to inflammation of the tympano-mastoid. The production of irritation and congestion is followed by manifestations of tinnitus aurium and vertigo, while later there may be destruction of tissue, with loss of hearing and abridgement, if not complete cessation, of vestibular function. Under these circumstances it is not the nerve mechanism alone which suffers, but the bony labyrinth itself may be affected by the inflammation to such an extent as to induce necrosis.

Facial nerve complications occasionally follow operative procedures upon the mastoid, although the nerve may be involved when the mastoid wall is very thin, or has actually been eaten away by necrosis, even before operative intervention has taken place. That form of facial paralysis which was formerly termed Bell's palsy, but is at present more exactly designated as toxic facial neuritis in many cases is manifested in patients who have evinced little or no tympano-mastoid disturbance. Yet when other nerve affections, such as tic douloureux, or symptoms referable to the cochlea and tympanum, are in evidence, a careful scrutiny of the middle ear will practically always disclose the fact that the facial nerve is secondarily involved in a pathologic process originating there.

The *Gradinego syndrome,* which is a combination of manifestations arising from an otitis, with inflammation in the petrous portion of the temporal bone, the pressure from the inflammatory process being brought to bear upon the greater trunks of the fifth nerve, or occasionally even upon the Gasserian ganglion. This syndrome may indicate by an excruciating pain in the side of the face, that intracranial or meningeal involvement has taken place in what has heretofore appeared to be no more than a simple inflammation of the middle ear.

Brain abscess may also be first manifested by this syndrome, or it may only be discovered when operation upon the mastoid has been undertaken. This is one of the gravest complications of mastoid disease, and at operation every precaution should be taken against its occurrence by instituting abundant drainage, and watching carefully for any signs indicating secondary pus formation. Extra-dural abscess may present no other symptom than severe and persistent headache, only relieved by operation and drainage.

Brain abscess may also be caused by a secondary infection through the internal auditory meatus, coming by way of the labyrinth, or along the course of the facial nerve. In the same way infection may travel *via* the blood vessels or the sacculus endolymphaticus on the surface of the petrous portion of the temporal bone; or again it may result from a localized meningitis.

Whatever the route by which infection has been conveyed so as to induce intracranial abscess formation, the single symptom common to all varieties is the constant excruciating pain in the head, which finds no relief except by some intervention which makes drainage of the abscess possible. Increase of intra-cranial pressure may be observable upon examination of the ocular fundus, there may be projectile vomiting, and slowing of pulse and respiration are commonly in evidence, but none of these

signs is absolutely pathognomonic. But the headache alone, in connection with an already recognized mastoid condition, should be enough to warrant exploratory operation.

Lateral sinus thrombosis is another possible complication of mastoid disease, which is not only a very grave condition in itself, but may be still further complicated by involvement of the jugular bulb and internal jugular vein, the process frequently extending until it includes the superior and inferior petrosal sinuses and eventually the cavernous sinus as well. Until very recently cavernous sinus thrombosis was regarded as inevitably fatal, but within the past few years a few cases have been reported which terminated in recovery.

A sharp chill is usually the first symptom of lateral sinus involvement, often occurring when the clot has affected but a small part of the sinus wall. But as clot-formation extends and the vessels lumen is more and more occluded, chills, alternating with sweating and high temperature will be in evidence, and the blood count will show a great increase of leukocytes and polymorphonuclears—except in those patients whose condition is becoming rapidly hopeless. Prompt operation for exposure and removal of the clot is the only possible means of relief, and great care must be exercised that no particles are permitted to escape into the circulation, lest a secondary infarction lower down, should take place. When the condition has advanced so far as to complicate the lateral sinus, operation is still our only recourse, though supportive treatment, and every measure which tends to eliminate toxins, and increase the patient's general resistance, will be of service. From time to time various measures and medications are warmly recommended, but it has been my personal belief that little is accomplished by using serums, antitoxins and intravenous injections of sterilizing medicaments.

Meningitis is always present in some degree in every case where mastoid disease or other ear condition has developed cerebral complications—such as abscess, either within or without the dura, or a sinus thrombosis. The inflammatory process may be strictly localized however, and give little evidence of its existence, save a slight increase in spinal pressure, constituting what is known as a serous or protective meningitis. When still confined to the dura and arachnoid, the condition is designated as pachymeningitis—which is strictly inflammation of the dura alone—or leptomeningitis; and when the inflammation extends so as to involve the pia mater also, it is known as leptomeningitis interna, or generalized meningitis.

As the involvement extends, the symptoms become more pronounced and characteristic, though even then they vary considerably, according to the extent and violence of the inflammation and the organisms which are responsible for it. In general, chills, fever with slow pulse rate, headache, vomiting and more or less mental confusion to the point of delirium, are the characteristic manifestations. Irritation of the nerves at the base and vertex of the brain may be evidenced by optic phenomena such ptosis, squint and optic neuritis, or by facial paralysis and spasm of the neck muscles. One of the most helpful diagnostic procedures is examination of the spinal fluid, for not only will spinal pressure be found increased, but there will also be changes in the cytologic bacteriologic and chemical content of the fluid itself. A cloudy fluid indicates that many pus cells are present, and bacteriologic examination will usually disclose the causal organism, and make it possible to differentiate a septic meningitis subsequent to a nose or ear condition, from an epidemic meningitis with a co-existing suppurative otitis media or nasal sinusitis, having no direct connection with the meningeal inflammation.

Unless treatment is prompt, meningitis is rapidly fatal, and when the later symptoms usually described in text-books are in evidence, all hope of saving the patient's life must be abandoned. In this affection as in many others, prevention is the best treatment, and in handling any case of ear disease where intra-cranial complications are at all possible—and that means practically all of them—the attending physician should use every precaution to avoid any possibil-

ity of abscess formation. If the original focus is in the middle ear, the mastoid or the labyrinth, it must be early sought for, opened up and thoroughly evacuated and drained, before the infection has a chance to do further damage. If the condition has already progressed to brain abscess or lateral sinus thrombosis, a localized meningitis will be an invariable accompaniment of these conditions, and in handling them the attendant should never forget the danger of this rapidly progressing into a generalized meningitis.

Every type of brain intervention requires the highest operative skill, the patient's life literally lying in the surgeon's hands. Repeated spinal puncture has proved of much assistance, both for the relief of pressure and removal of infected fluid, giving nature a chance to replace it with normal secretion.

Puncture of the cisterna magna gives the most satisfactory results, as this is the nearest available point to the site of infection. So far, the injection of medicaments has not proved practically satisfactory, but I am hopeful that before long a substance will be found suitable for use in this way, for by this means we would be provided with a most efficient weapon in the fight against the present high mortality of meningitis.

In all intra-cranial complications the after-care of the operative patient is of the utmost importance, and should be under the immediate supervision of the attending surgeon. Otherwise, still further complications may easily supervene, such as cerebral or cerebellar hernia. Though some authorities —King for example—believe that the production of hernia is a practical way of handling a brain abscess, I for one, most emphatically oppose any such procedure, as the loss of the function of speech or permanent disturbance of equilibrium may result from a hernia in the left tempero-sphenoidal or cerebellar area, or similar vital localizing center. In my rather limited experience, the best procedure seems to be compression of the hernia without obstruction of free drainage from the abscess.

Non-suppurative middle ear diseases are often complicated by nerve infections, which may be merely irritative, or actively destructive. Tinnitus aurium is one of the frequently occurring manifestations of affections of this character, and because of its psychic effect, is often one of the most trying conditions the otologist is called upon to combat. Otosclerosis, especially during the early stage of sponge formation in the bone, may first be manifested by these ear noises, at times accompanied by vertigo and other vestibular symptoms. Tinnitus is also a frequent finding in toxic labyrinthitis, which has its origin in focal infection from teeth, tonsils or other source, or from syphilis in one of its later stages. Irritation of the eighth nerve may also be a sequel of an acute infectious disease such as scarlet fever or diphtheria.

Other conditions affecting the eighth nerve are external trauma, notably fracture of the skull at the base, which carries with it the additional menace of a septic meningitis; or a neoplastic growth developing behind the labyrinth. If this arises within the internal auditory meatus it will involve the seventh nerve as well, and the symptomatology thus produced is now well recognized by neurologists and specialists in cranial surgery. It is however, somewhat beyond the scope of a consideration of ear disease complications.

Syphilis invades the auditory apparatus in common with many other special sense organs, and the otologist must always be on the alert to detect its presence and not be misled in making his diagnosis. Leutic labyrinthitis, affecting the bone, is occasionally complicated by gumma or necrosis which had its origin in an earlier syphilitic suppuration. The tympanum will be perforated in several places, the perforations often showing granulated edges, and in most cases the labyrinth function will be impaired or altogether destroyed. Though the Wassermann reaction upon the blood of a patient displaying this condition will usually be four plus, the occasional occurrence of a negative reaction should not be accepted, in the presence of positive clinical findings, as ruling out syhpilis as the causal factor.

In conclusion, I would emphasize the necessity of guarding against complications in even the most harmless appearing ear condi-

tions. One can never tell what extraneous causes may supervene to change the entire aspect of an apparently simple case, and safety, like liberty, can only be purchased by eternal vigilance. Prevention, as always, is far preferable to cure, so the best way to handle complications is not to have any. This highly desirable aim, the specializing otologist would be greatly assisted in attaining if all cases of ear disease were seen early, and in this, the general practitioner can be of much service by educating the public in regard to the dangers of ear disease, and the necessity of giving attention even to seemingly trivial ailments of this character. The complaints of children especially, are all too often disregarded, and many a serious adult condition has had its origin in a neglected affection of childhood, that if intelligently handled at the start, would have proved trivial enough, but allowed to progress and involve other structures, in many cases, has entailed extended invalidism and intense suffering, or even death itself.

THE X-RAY DIAGNOSIS OF PULMONARY TUBERCULOSIS *

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I DO NOT want to appear before this society as an expert roentgenologist. I am only a young practitioner bending my efforts toward the diagnosis and treatment of disease. Diagnosis is surely the backbone of medicine and as our efforts at correct diagnosis increase, so will our percentage of cures increase.

It is my object to try and show that the X-ray chest plate has a very important part in the diagnosis and the differential diagnosis of chest disease, and to encourage a more general study of plate reading by the clinician, so that he may confirm to his own satisfaction, the readings made by the roentgenologist, because the history and physical signs must be considered to get the most accurate readings.

Only a few short years ago I had a rather puzzling case and I took the chest films to several other men for readings. Each one had his own method of interpretation with wide divergence of opinion. I then made up my mind to learn to read and make chest films that would not be forever leaving a doubt in my mind as to the correctness of the diagnosis. I do not mean to say that I have found a perfect method, but to Dr. Kennon Dunham of Cincinnati, Ohio, I give the credit for developing what I believe to be, the most scientific method. It is my opinion that a more general use of his technique would lead us to be more accurate in our readings.

A knowledge of the following anatomy is prerequisite to the careful reading of chest plates. The trachea follows the median line down to about the lower border of the fourth thoracic vertebra, where it divides into right and left bronchi. The left bronchus passes under the arch of the aorta, and takes a greater angle than the right bronchus which is almost a straight continuation of the trachea. The right bronchus gives off the eparterial bronchus to the upper lobe and it divides into the vertebral, first interspace, and second interspace trunks. There are trunks to the middle and lower lobes. On the left the hyparterial bronchus gives off the vertebral, first and second interspace trunks. Then there is a trunk to the lingual tip and trunks to the lower lobe. These divisions of the bronchi show on the plate as white lines of increased density, passing from the hilum toward the periphery. A primary lobule is made up of a terminal bronchus, connecting air sacs, alveoli, nerves, blood and lymph vessels. A secondary lobule is the amount of lung tissue contained between two septa. Septa are

* Read before the West Virginia State Medical Association, Morgantown, May 25, 1926.

prolongations of the connective tissue from the pleura down into the lung. These connective tissue septa are rich in lymphatics and form a barrier to the spread of infection and inflammatory exudates. These septa account for the cone shaped densities on the X-ray plate and the localized rales. Spread of infection from one secondary lobule to another does not take place by continuity until cavitation breaks down the connective tissue barrier. Thus if two or more cones of exudate are present, they will likely be of different ages and show different densities on the X-ray plate, provided the infecting agent is the tubercle bacillus.

It is also necessary to know something about the pathology of pulmonary tuberculosis. First, two main divisions of tuberculosis must be recognized, puerile or childhood type, and the adult tuberculosis. Consider that about nine out of every ten people have had childhood tuberculosis, which is the reaction to infection in a non-allergic soil. The childhood tuberculosis does not have the same pathologic findings as the adult infection and therefore a different X-ray picture. It has been shown and clearly proven, that with the first infection, there is only a slight reaction at the point of inocculation, while the nearest lymph nodes undergo a violent reaction. A second inocculation will show active reaction at the point of inocculation and very little disturbance in adjoining lymph nodes. Thus with infection in the adult or in allergic soil there is an exudate at the point of inocculation. This exudate floods a compartment of the lung and undergoes one of two procedures. Either exudation, fibrosis, calcification and healing, or exudation, caseation, ulceration and cavitation. This flooded lung lobule, walled off by the connective tissue septa of the pleura, accounts for the localized rales on ausculation and for the cone shaped densities seen on the X-ray plate. Tuberculosis in the adult is a disease of multiple infection. An exudate is thrown out, say in one apex and very soon another lung lobule is infected and another exudate is thrown out. These two exudates will generally have a tendency to healing and being in different stages of healing will give differing densities on the X-ray plate. Calcification will give the deepest density, while serous exudate gives the most delicate density on the plate. The delicate densities are the ones that denote activity and are the ones most difficult to see on the X-ray plate. Other respiratory diseases will also have cone shaped densities but they will all be of the same density. True, in the presence of an old inactive tuberculosis there may be a cone of density due to influenza and then active tubercular infection should be diagnosed from the X-ray findings. While this would be a mistaken diagnosis, it would be justified. Therefore to read active adult tuberculosis on the X-ray plate we must see two or more cones of exudate of differing densities.

Calcification at the hilum of the lung in the adult chest, in which no peripheral cones are visible, should be considered as resistance and not disease. Generally, an X-ray diagnosis of tuberculosis should be limited to parenchymal tuberculosis in the adult. It is not good technique to read peribronchial and hilum tuberculosis from an X-ray plate. The reason for this is, we cannot differentiate between active and healed lesions, without parenchymal exudates showing densities. All adults have at some time suffered from pulmonary infection with tubercle bacilli or some other organism, and both give heavy trunks and hilum shadows.

In taking up the reading of chest plates, remember we are dealing with shadows of differing densities and consider the possible errors due to poor technique, faulty plates, etc. Again consider that certain pictures are described to mean certain types of tuberculosis and yet no two plates can be found to give exactly the same picture, but when the densities described are found, something definite can be declared. Thus the pathological changes can be followed in the living lung.

Puerile tuberculosis can be diagnosed when the X-ray plate shows a spot of heavy density in the mid-lung zone, connected to the hilum by a line of increased density and most important of all; calcification in the hilum, in the form of a so-called caseocalcareous node. Upon the X-ray plate it has

the density of calcium. It is usually large and can be seen to be made up of many small flakes of calcium. Microscopic sections have shown this lesion to consist of a soft caseous center containing calcium and larger hard flakes of calcium around the periphery. Such lesions should be considered as potential foci of infection. It is true there may occur puerile tuberculosis in the adult and adult tuberculosis in the child. When either of these cases occurs the prognosis is extremely bad.

In the adult the most frequent site for tuberculosis of the lungs is in the apices. It is recognized on the plate by parenchymal exudates of differing densities. It would be very unusual to get a plate of a very incipiency for at that time the patient is not sick. By the time he goes to the doctor there will almost invariably be some heavy densities that can be easily seen on the plate and if the case is active some cones of delicate exudate.

After active apical tuberculosis the next most frequent active tuberculosis in the adult is the caseous broncho pneumonia. On the X-ray plate it is seen as a course flocculent mottling, the densities resembling raisins on a stem, scattered throughout the middle and lower lobes, with an older healed lesion, usually containing cavities, at the apex of one lung. It is remarkable how extensive this involvement may be and not produce much if any clinical symptoms. The prognosis is usually bad although some of these cases will clear up surprisingly well.

Caseous lobar pneumonia is seen usually as large cone shaped densities, varying with the size and number of secondary lobules involved. It is designated by the presence of old apical lesions. This type of lesion will usually break down fast, into cavity formation, the so-called "hasty consumption". Large areas in the lung may be involved for some time without causing severe symptoms. An unresolved pneumonia will give somewhat the same picture, but without the old apical lesions.

Miliary tuberculosis gives an X-ray picture of fine, sharply defined, discrete studdings, more or less evenly distributed throughout all the lobes. It is believed to be the result of lack or loss of immunity, because it is found in the adult associated with old healed lesions. In children the old lesion may not show on the plate but if not there is usually history of other infection in some part of the body. The diagnosis is not justified in a patient who has worked in any of the dusty trades. Lungs of anthracite miners will similate miliary tuberculosis.

There are some other forms of tuberculous pleura and lung infections, only one of which I wish to mention. Caseous pleurisy shows as an empyema associated with caseous broncho-pneumonia, without the apical exudates. It might be one of the forms of tuberculosis in the patient devoid of immunity. The most important thing about reading of active adult pulmonary tuberculosis from the X-ray picture is the recognizing exudates of differing densities, and the densities of delicate nature are most difficult to see and mean the most in diagnosing activity. If these delicate densities are to be seen, the X-ray plate will have to be taken so as not to blot out the very thing of most importance. Most any plate will show the old healed lesions but the delicate active exudates will not be seen on plates exposed for two or three seconds with a low voltage. Chest plates should be steroscopic, the patient standing with scapule pulled to one side. There should be no breathing or movement of any kind, by the patient, between exposures. The best exposure time is between one-tenth and one-twentieth of a second.

In conclusion, the X-ray examination of the chest is indispensable to the diagnosis and understanding of pulmonary tuberculosis and when employed with the other methods at one's disposal, and when this fact is more generally recognized, much higher standards of efficiency in the field of medicine will be attained. Dunham says in one of his papers, "In order to read X-ray chest plates, there is required a knowledge of anatomy, pathology, physiology and patho-

genesis of tuberculosis, in addition to clinical tuberculosis and roentgenology."

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APPENDICITIS IN CHILDREN UNDER FIVE YEARS OF AGE*

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BECAUSE of the seriousness of appendicitis when it does occur in children under five years of age, it may not be amiss here to review what has been written on the subject. It is a problem with which we are little familiar because of its seemingly uncommon occurrence. The literature, which has had many valuable contributions within the last two years, is quoted freely with the object of bringing before you tonight the views held by those outstanding men who have written on it. No observations or conclusions herein given are original with the writer.

As to its incidence, we get some idea from hospital and mortality statistics. Christopher[1] points out that the following incidence and mortality existed for appendicitis:

1922—U. S. registration area—152 deaths under 5 years; 13,229 all ages, 3.9 per cent.

1923—State of Illinois—53 deaths under 5 years; 1,146 all ages, 4.5 per cent.

1924—State of Illinois—65 deaths under 5 years; 1,100 all ages, 5.9 per cent.

In his own careful series of 533 cases, he found an incidence of 18 cases or 3.4 per cent. Reports given in 1900, 1910, 1920 and 1926 show an increasing percentage of incidence which is in all probability due to earlier recognition and more careful observation.

T. H. Kelly[2] in compilling the reports of twenty-two authors in 1923, showed that in 16,571 cases of appendicitis there was an incidence of 2.41 per cent under five years of age, 8.3 per cent in the second five-year period, and 16.3 per cent in the third five-year period of life. R. W. Bolling[3] reports 3.5 per cent in the first five-year period, 8.5 per cent in the second period and 16 per cent in the third five-year period of life. He further points out that while such consideration has been paid to acute appendicitis in children, that most of the observers do not separate age groups sufficiently to emphasize the great difference in the stage at which the disease is recognized, and in the operative mortality of the cases occurring in the first five-year period as compared to that of the second and third five-year periods. He reports a mortality just eight times greater in the children under five years of age as compared to those between six and sixteen years of age.

McCosh[4] in 1904 reported 1.7 per cent of his cases of appendicitis as occurring in children under five years. In 1909 Churchman[5] reported less than 1 per cent of the cases of appendicitis being admitted to Johns Hopkins hospital as occurring in children under five. In services limited to children of course the percentage runs higher. Bolling[3] reports that 90 per cent of the babies in his group were admitted with an abscess, or with a ruptured appendix with widespread peritonitis. In Beekman's[6] se-

* Read before the Cabell County Medical Society, March 24, 1927.

ries, all twenty-one cases were ruptured before admission. Green[7], Stuot[8] and Bolling[3] state that appendicitis is by far the commonest surgical abdominal disease of young children. Vincent[9] says that 60 per cent of all laporatomies in children are for appendicitis. Stuot[8] thinks that the appendix is the cause in 95 per cent of all the cases of non-tuberculous peritonitis in children under five years of age. In 1922 in the Registration Area of the United States[10], appendicitis or typhlitis was given as the cause of death in 516 children under five years of age, while at the same time meningococcus meningitis claimed 477, non-epidemic meningitis claimed 466, tetanus 452, anterior poliomyelitis 428, cancer 302, encephalitis 254 and smallpox 82.

The etiology is essentially the same as in the adult cases, with the exception of the fact that parasites invade the appendix and cause appendicitis more frequently in children than adults. Cecil and Bulkley[11] found the oxyuris vermicularis or trichocephalus trichuria to be the causative factor in 15 per cent of a series of 129 cases. Others have reported epidemics of appendicitis following acute nose and throat or respiratory tract infections. In 1909, Farrsac[12] emphasized the "indisputable relationship of cause and effect between affections of the nasopharynx and the appendix." Foreign bodies and fecoliths probably play a negligible role, yet Richter[13] feels they are causative factors at times. Abt[14] feels that traumatism or diseases of the intestinal tract play a part in causing appendicitis. Peple[15] suggests especially watching for it immediately after tonsilitis and after measles and scarlet fever.

Anatomically the appendix develops from a narrowing of the distal portion of the cecum and at birth there occurs a secondary differentation when the development of sacculation of the large intestine occurs. As to location in the infant the entire ileocecal apparatus is at a somewhat higher level than McBurney's point, and in fact the cecum is often above the anterior superior spine of the ileum. In early life the communication between the cecum and the appendix is larger than in adult life. This probably hinders the fecal stoppage which seems to be of some impor- relatively in the infant or small child than in the adult. Richter[13] thinks that the higher relative position in the child is of little significance either as to etiology or as to its adding to the difficulties of diagnosis or localization. Dean Lewis[16] has noted that the intestinal walls of the newly-born seem to be permeable to bacteria which the intestinal walls of older children will not permit to pass through. Early development of gangrene is said to be characteristic of appendicitis in the young child, and there are many speculative ideas as to why this should be so. The omentum is so small that it is of little protective help. Appendicitis has been found during the first day of life but usually accompanying eventration, hernia or some other abdominal defect.

The diagnosis of the condition is generally considered to be difficult. Finney[17] says that in adults the tendency is to mistake something else for appendicitis, while in children the tendency is to mistake appendicitis for something else. Helmholz[18] and Deaver[19] both insist that every acute abdominal condition in childhood should be considered appendicitis until it has been proved otherwise. As to the nature of appendicitis in young children, there was among the earlier writers, a unanimity of opinion as to its characteristic (1) insidiousness of onset, and (2) tendency to rapidity of progres, to gangrene and perforation.

One cannot well rely on a history of previous attacks, a factor so suggestive in adults. While the onset is usually slow and insidious, it may be abrupt depending on the type of infection, its virulence or abnormal anatomical conditions existing. Therefore it may be said that it has no truly characteristic onset. While most cases seem to go on to spontaneous perforation and peritonitis, Bolling[3] says he feels certain that some cases actually do subside and resolve without surgical intervention. These cases usually give the observer the impression that he has not been dealing with a true appendicitis. This occurs in adults and

older children, and he feels also that it occurs, although probably less frequently, in children under five years of age. He feels that the clinical picture of acute appendicitis in young children is founded on a group of cases representing the last stages of the worst forms of appendicular inflammation, and that as a rule only the worst cases are recognized.

Drachter[20] rightly emphasizes the belief that the problem of appendicitis in the young child is one of diagnosis, and that early operation is the desideratum and that if performed early, before there is a generalized peritonitis, that there should be no greater mortality among young children than adults.

Pain is a cardinal symptom and is almost regularly present although it may be denied through fear. Pain may be general, or localized over the right lower quadrant. Howland[21] has also pointed out that even with localized peritonitis, pain may be low down in the pelvis, or high in the abdomen or in the back. It may even be on the left side. Howland[21] said that in a child too young to localize pain, it may be inferred from constant crying and restlessness, and from the fact that he sleeps badly. The child with a febrile disease is more apt to sleep for long stretches at a time but "the child with abdominal pain will not sleep or let anyone else sleep." There also occur cases in which pain is very slight, especially is this apt to occur in the form described by Kelly[22] as the "larvate form." Pain is of two types in appendicitis and its subsequent localized peritonitis. The first type of pain is the one seen earliest and which comes from the appendix, a hollow viscus, being distended. Disturbed action of the sympathetic nervous symptoms as the result of this distention produces the chief of symptoms as long as the inflammation is localized to the appendix. The sympathetic fibres make constant connections with the various spinal segments and since the sympathetic nerves do not contain pain fibres, the sensation of pain is in some way associated with a reference of the stimulus of the cutaneous distribution of the spinal nerves with which the sympathetic makes its central connection. When tension within the appendix occurs there is probably a stimulus that calls forth the sensation of pain in the eleventh distribution of the tenth and eleventh intercostal nerves. This is the pain referred to the umbilical and often general abdominal area from overflow. There is a second type of pain which occurs when the inflammation spreads to contiguous structures. This is the pain felt in the right iliac fossa or in whatever location the appendiceal infl mmation happens to be. This secondary type of pain is the one that is valuable in a diagnostic way as to the exact anatomical position of the organ. The pain is an expression of an irritation of the somatic sensory nerves and the result of inflammation of the subperitoneal tissues. The child with abdominal pain hates so much to be moved and resents it; often the legs are held constantly flexed. Howland[21] felt that a child in the sitting posture without complaint argues strongly against appendicitis. Pain at the umbilicus during micturition has been said to have more weight than the absence of tenderness in the right flank and muscular defense. Painful urination or defecation may be very suggestive. Churchman[5] sounded a boy for vesicular calculus for painful urination when he had an acute appendicitis.

Vomiting was said by Holt[23] to be probably the most constant symptom. Finney[17] says that it produces pain and that nausea may be present in the place of vomiting. In several large series of cases it seemed that vomiting was an unreliable symptom, being absent in 10 to 15 per cent of the cases.

Constipation is said to be more frequent than diarrhea, probably because of the preceding anorexia and insidious mailaise.

The examination must be patiently and gently made arousing as little fear as possible in the little fellow. Howland[21] says that the child with appendicitis does not appear to be acutely ill until later stages. He is usually pale, lies quietly, often dislikes to move the right leg and keeps the abdomen as quiet as possible by breathing costally. Often the right leg or both legs are drawn up. When made to walk often

the child limps or drags the right leg showing the so-called "Psoas symptom." One must be very tactful and patient in approaching and examining the little fellow, making up to him in the most advantageous manner possible realizing that he is apt to have his suspicions easily aroused by a boisterous or unduly active interest in his welfare. Quiet and friendliness is probably the most generally successful manner in which to approach him. It is best to see that the palm of the hand is warmed and laid gently on the little abdomen. At first no pressure is made and his confidence gained if possible. The right quadrant is palpated and examined last, and gentle pressure is made in the other areas as the examination proceeds. As the right lower quadrant is approached the utmost of caution and gentleness should be used. Many feel that a better sense of muscle resistance is felt by using the fingers of the second hand to supply pressure for palpation leaving the tactile sense of the first hand to interpret its sensations unobscured by voluntary muscular efforts of the muscles of that hand and forearm. It is better not to remove the hand suddenly from the abdomen as a sudden release of pressure is said to be as startling to the small child as rough sudden pressure. It is said to be better to move the palm of the hand gently over the abdomen rather than to lift it and reapply it several times. Be that as it may, it is extremely difficult to get a satisfactory examination and one that will make us feel easy in saying that there is or is not an appendicitis. The detection of a peritonitis is a relatively simple matter be it localized or generalized.

We want to pick up our cases of appendicitis before this stage has developed to get best results. The child may refer pain wherever situated to the abdomen, usually the whole abdomen. He cries when touched, and when old enough to speak insists that all palpation is painful. He holds his abdomen rigid and every attempt at approach is resisted. During inspiration one can usually get the best impressions regarding the sense of resistance, tenderness, etc. Kelly[22] and Finney[17] advocate palpating for a mass under ether at times and Finney[17] and Helmholz[18] advise being prepared to proceed with the operation if a mass is found.

When there is a *definite tenderness in the right lower quadrant* in the region of McBurney's point, it is the one most conclusive single bit of evidence. On this all are in accord. *Right sided involuntary muscular rigidity* or muscle defense is an extremely important diagnostic factor but extremely hard to elicit and interpret. Of course, this occurs only after the appendicitis has progressed to the stage of an accompanying parietal peritonitis. Rigidity tends to diminish as the infection becomes localized. *Rectal examination* for tenderness and mass is of especial value in retrocecal, pelvic or left sided appendicitis and is stressed by most writers as being an important part of the routine examination of any abdominal condition in early childhood. An enema which produces pain in the right lower quadrant is felt by many to be an important suggestive sign. *Tympanites* suggest an extensive peritoneal involvement. *Elevation of temperature* is almost constantly present, although rarely exceeding 102 degrees by rectum, and absent only in collapse. *Pulse rate* is in proper proportion to the degree fever.

The *leukocyte* count is of importance in uncomplicated cases, but more especially is the differential leukocyte count of importance as either a relative or an actual polymorphoneucleosis speaks strongly for a pyogenic infection. The total white count may be very deceptive as is shown by Bolling's[3] case of a boy 4 years old with a grossly ruptured appendix, an abscess and spreading peritonitis with a leukocyte count of only 4,300, 65 per cent of them being a polymorphoneuclars. There is a tendency for the unruptured appendicitis cases to show a lower leukocyte count than the ruptured cases, occurring nine times as frequently under 10,000 in the unruptured as in the ruptured appendix cases. Average counts are from 10,000 to 20,000[1]. A low leukocyte count with a normal or lower than normal polymorphonuclear count generally excludes appendicitis or other pyogenic infection.

In making the *differential diagnosis* there are many things to confuse with acute appendicitis. Probably most of the milder cases are called "food poisoning", cyclic vomiting, colic, etc.[24]. It is however often very difficult to differentiate between acute appendicitis on one side and pneumonia, pyelitis, enteritis, intussusception and pneumococcus or streptococcus peritonitis on the other hand. Howland[21] points out that in infancy appendicitis is often believed to be pneumonia because of the frequency of pulmonary disease at this age. With older children, primary pneumonia is frequently considered to be appendicitis. Helmholz[18] is mainly responsible for the comparison here drawn between appendicitis and pneumonia in children under five years of age.

In *appendicitis* there is only at times a history of a cold, occasionally an attack of grippe, but it is not the rule. Abdominal pain is more apt to be present and is apt to be paroxysmal in type, less intense and often localized, yet at other times entirely general. Vomiting occurs in 70 per cent of the cases. Diarrhea is uncommon. The facies in uncomplicated cases is not anxious in type but rather pale and quiet. Breathing is usually of the shallow costal type and on examining the lungs they are normal. Abdominal tenderness is slight or severe, more marked on pressure and tends to be localized. The rectal examination often shows tenderness on the right side. X-rays show nothing in lungs. The leukocyte count varies usually from 10,000 to 20,000. The temperature ranges from 98.6 to 102 degrees by rectum. Compared with the irritable, restless, flushed pneumonia with expiratory grunt, etc., the little appendicitis patient usually lies quietly in bed hating to be moved, or bothered but not suffering greatly. This is the picture seen in the early stage. As perforation and peritonitis develop, the picture gradually changes to that typical of these conditions.

In *pneumonia* there is usually a history of previous cold, cough or chest pain. The abdominal pain is severe, constant and general. Vomiting occurs in only 14 per cent of the cases. Diarrhea is common with the high fever. The facies present an appearance of real illness and the alae nasi are dilated. The face is flushed. Shallow abdominal breathing with an expiratory grunt is usually found. The sensorium is often slightly dulled. Tubular breathing is usually to be found early. Abdominal tenderness is superficial, severe, diffuse, higher in the abdomen and not made worse by deep pressure. Rectal examination reveals nothing. The X-ray of the lung shows a typical shadow. The leukocyte count usually is 20,000 to 50,000. The temperature is usually high, about 103 to 105 degrees by rectum. The general attitude is restless and irritable.

Dysentery or *ileocolitis* rarely gives a localized pain and there is always pus, blood or mucus in the stools accompanying the diarrhea. *Gastro-intestinal upsets* usually lack the fever and leukocytosis although they may at times be recurring attacks of appendicitis. *Intussusception* is usually found in children under two years. It has a sudden onset. The pain is paroxysmal if any. There is no fever early. There is constipation, blood tinged mucus from the bowel and an abdominal tumor. *Acute intestinal obstruction* usually presents severe pain, cessation of bowel movements, tympanites, and vomiting is more persistent than in appendicitis. The prodromal stages of the *acute infectious diseases* often present the most confusing pictures for a few hours. Measles, scarlet fever, influenza and acute tonsillitis may be most puzzling in the beginning. These usually present their characteristic diagnostic features and make diagnosis a definite matter in a short time. An attack of influenza with intestinal manifestations may be very difficult to rule out. As a rule the leukocyte count is very valuable here and the abdominal tenderness not in proportion to the abdominal pain.

Richter[13] says that the diagnosis of appendicitis in infants is usually announced at the necropsy table. Helmholz[18] says it is better to operate on an occasional pneumonia thought to be appendicitis, than to let an acute appendicitis go to generalized peritonitis. While there have been many patients with pneumonia given an opera-

tion, it is surprising to find how little the mortality of the pneumonia has been influenced by this accidental operation. The younger the child the more easily appendicitis is confused with other diseases, and the more inaccurate the diagnosis, and likewise the higher the mortality. It is more common to mistake appendicitis in young children for other diseases than vice versa.

Bolling[3] places the findings in their order of value as follows: (1) localized tenderness with or without muscular rigidity, (2) pain, (3) vomiting, (4) elevation of temperature and (5) leukocytosis. In his findings tenderness was pretty constant if the examiner was patient and gentle. Rigidity he felt was very hard to evaluate but when present was a most valuable sign. He felt it was usually difficult to feel certain whether it was present or not. Local tenderness seemed to be the sign of most value and if corroborated by pain and vomiting and leukocytosis, the diagnosis would seem reasonably sure. He hesitates to make a diagnosis of appendicitis when he convinces himself that there is no local tenderness. The absence of no one sign or symptom is sufficient to rule out appendicitis. He feels that while there is some difference in children under two years of age; in those older the pathologic process and its diagnostic features begin quickly to simulate closely those of the adult. Diagnosis is admitted to be our main barrier in the immediate problem. He concludes that (1) acute appendicitis after the fifth year has little to differentiate it from the clinical course and the results from the same disease in adults, that (2) in the first five years of life the disease is of sufficient frequency to merit constant consideration, that (3) no child with symptoms of abdominal disturbance should receive a cathartic until the possibility of appendicitis has been excluded, that (4) there is no exception to the rule that an operation is indicated forthwith in any stage of acute appendicitis in a child and that (5) late recognition of the disease, rather than the rapid course and lack of bodily resistance, is the cause of the high mortality at this period of life. He emphasized the big responsibility of the general physician and medical man in recognizing the possibility of these cases at a time when surgical consultation and subsequent surgical interference is most effective.

Christopher[1] summarizes the important findings in a little different manner giving them in the following order: (1) elicitation of tenderness in the right lower quadrant, (2) leukocytosis, (3) rigidity of right lower quadrant muscles, and (4) abdominal pain. He states also that it has a high mortality and that there is a tendency to rapid progress to perforation and peritonitis.

Let us, therefore, conclude this review by saying that it seems certain that the problem of appendicitis in the young child is one of diagnosis. The operation should be done before there is a general peritonitis or pocketing of pus in numerous places. Acute appendicitis in infancy is characterized usually by its insidiousness of onset, its tendency to the rapid formation of gangrene and to perforation. General peritonitis is a much more frequent sequel than in the adult and attempts at localization are much more ineffectual. It is in earlier diagnosis and early operating that we may expect to reduce the mortality of appendicitis in children under five years.

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SEROLOGIC STUDIES

The results of precipitin tests on the urine from patients who received antistreptococcic serum, and from dogs following the intravenous administration of normal horse serum are reported on by Ralph M. Tandowsky, Salt Lake City (*Journal A. M. A.*, Jan. 23, 1926). In all the samples that were positive, the reaction was apparent within an hour. Urinary controls were used with each specimen tested. The urine of the patients receiving the serum first presented traces of horse protein in approximately one hour. This proteinuria continued for approximately four hours. The greatest amount of protein excretion in the urine of dogs after the intravenous injection of horse serum occurs within the first eighty minutes. Appreciable amounts of protein could not be detected in the urine until thirty minutes after intravenous administration. It would appear that each animal has a certain renal threshold for the elimination of foreign proteins. Intravenous injection apparently results in a more rapid elimination by way of the kidney than other parenteral routes described by other writers. When large doses of serum in disease are administered by the intravenous route, some of the serum proteins are filtered through the kidney. This study indicates the use of highly concentrated serums in the treatment of disease.

PSORIASIS CURES

Below are some unexpected cures of psoriasis without argument as to how or why:

Case 1. Large doses of strontium salicylate internally and emulsion containing calamine and zinc externally.

Case 2. Sodium salicylate grains twenty intravenously each day externally, lactic acid, acetic acid, salicylic acid, and liquor formaldehyde each three drachms, bichloride of mercury four grain in alcohol up to eight ounces.

Case 3. Psoriasis of scalp, exposure to Texas sunlight by discarding his hat.

Case 4. Jewish boy eight years of age—thyroid — nucleoprotein tablets for two months.

Case 5. Case of nervous woman—following fright—bromides.

—*Dr. E. A. Blount, Dallas, Texas, Southern Medical Journal*, May, 1927.

INDUCTION OF LABOR

In a series of ninety-one cases reported on by Mathieu in which induction of labor was successful in 96.7 per cent with castor oil, quinine and pituitary extract, there were no maternal or fetal deaths, either early or late. There were eight cases in which there was early rupture of the membranes (after labor had commenced but before the cervix was dilated two fingers). This did not have a bad effect on the labors, and morbidity did not result. The longest labor in this group was eight and one-half hours in a primipara, and the shortest was one hour in a multipara.—*American Journal of Obstetrics and Gynecology*, Feb., 1927.

CONGENITAL SYPHILIS

Grenet and Pellissier compare the lesions of syphilis transmitted to the first generation with those transmitted to the second generation. In the latter, the lesions are usually less grave and their aspect less specific. They moreover are less numerous and more uniform than in congenital syphilis in the first generation. The endocrine glands are the elective localization of the lesions, this fact being responsible for the large number of dystrophies and cases of defective development. Anomalies in character and mentality are frequent. They may appear as a condition of excitation with excessive activity, or as a condition of depression with asthenia and melancholia.—*Annales de Medicine*, (Paris) Dec. 1926.

HISTORY TAKING AND PHYSICAL EXAMINATION IN HEART DISEASE *

By G. H. BARKSDALE, M. D.
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THE majority of all patients suffering from cardiac disease present themselves seeking relief from a complaint which usually directs one's attention to the cardiovascular system. This in a sense, simplifies matters for with this lead one can at once get down to business without too many ramifications and digressions which in many instances only serve to confuse the real issue. A truly constructive history in such a case should as nearly as possible bring out such facts as would place these cases in certain definite groups to follow:

1. Straight valvular disease, acute or chronic, with or without varying degrees of decompensation.
2. Degenerative diseases of the myocardium.
3. Disturbances of function as a result of toxemia or neuroses.

I realize quite fully that one of such groups might overlap another, that all cardiacs ultimately suffer myocardial changes. However, this classification is meant to be intensely practical and for the purpose of directing treatment and prognosis and not scientific discussion.

In a sense, the history taking and physical examination begin at the same time. For the interested examiner can not but note certain appearances, mannerisms, movements and facial expressions in the course of the history taking. The general type of the individual should be noted, as to whether there is a tendency to exaggerate or repress, whether too much stress is laid on points irrelevant, for on the latter depends whether one is to allow the patient to tell his story or whether one must demand only replies to salient questions. It is generally through this part of the visit that one gathers impressions which are later to mean so much. It is important that the history in this, the first visit, should be as near the nature of a chat as possible, because the cardiac above all other patients should be kept as calm mentally and physically as possible, otherwise the entire clinical picture may be definitely disturbed.

All are agreed that every medical history should open with the reply to the question: "From what do you seek relief?" The reply is usually important to you and always important to the patient and he will always appreciate its special attention. I feel very definitely that following the "From what do you seek relief?" question one should get right on to the present trouble. My opening remark usually is: "You were perfectly well up until when?—'Yes'. And at that time what happened or started?" In this way, one gets right at the thing. I have more than once noted the amazement of the patient, who may have had pleurisy, when asked what his parents died of. It seems only logical to me to take up first, *present trouble*, then *past illness* and *family history*.

Group 1. Straight valvular disease, acute or chronic, with or without varying degrees of decompensation.

(a) Ability to do work or play. Does it fatigue you more than formerly? Mackenzie states that a child will not run at play if for its heart's welfare it should not. Elderly people who on grades stop apparently to admire the scenery most probably have stopped on account of a precordial pain or fatigue. The question of steps usually brings out satisfactory information.

(b) Precordial pain is extremely common. It led in frequency in Smith's series of cases. It should always be taken seriously (76 per cent mitral disease, 52 per cent with aortic disease). Pleurisy, gas and intercostal neu-

* Part of a Symposium before the Fayette County Medical Society at Montgomery, November 16, 1926.

ritis should be kept in mind, leading questions along this line should be employed.

(c) *Dyspnea,* which means improper aeration with corresponding carbon dioxide stimulation of the respiratory center is momentous, always appears at some stage in valvular disease. If constant, it is a fair gauge of cardiac efficiency. The ease with which breathlessness is induced and the response made by the heart to treatment of the condition, give us the data on which we can estimate the functional efficiency of the heart (Mackenzie).

(d) *Dizziness* occurred in 71.5 per cent of the mitral, and 66.9 per cent of the aortic cases. It is primarily cerebral anemia as evidenced by its occurrence on suddenly arising or being raised suddenly as in a barber's chair.

(e) *Palpitation.* In this group, my experience has been that it is not a frequent occurrence in early cases. Further, one should be sure that the patient complaining of such really understands what is meant by the term. In cases of valvular disease where there is a limitation of reserve force, slight physical effort or mental excitement may readily induce an attack (Mackenzie).

(f) *Cough,* which speaks usually for pulmonary oedema of decompensation, may occur very early, pressure of an auricle on the recurrent laryngeal nerve may also produce either cough or hoarseness.

(g) *Hemoptysis,* expressing pulmonary engorgement is occasionally seen.

(h) *Oedema-Cardiac* means decompensation. The weaker the driving left ventricle, the slower the blood stream in the parts where the force of the heart is normally least. First of liver and kidneys: gastric catarrh, albuminuria, pulmonary oedema, etc., naturally follow. It bears a ratio to the amount of exercise. In early cases, it appears about the ankles in the late afternoon only.

(i) *Cyanosis* speaks for incomplete oxygenation of the blood; it is rarely an early sign save in certain congenital lesions.

(k) *Sepsis:* Temperature, chills, sweats, petechial rashes—their presence or absence, should be gone into.

Past history will have been covered in so far as included in the sequence of events leading up to the present trouble. First in importance, come the streptococcic infections: Namely—acute rheumatic fever, tonsillitis, erythema nodosun, chorea, scarlet fever. Following these will come syphilis, growing pains, diphtheria, measles, septic teeth; in short, all acute or chronic infections of consequence. The severity of the illnesses and particularly the length of convalescence are important.

Group 2. *Degenerative Diseases of the Myocardium.*

Under this heading, one should elicit such symptom as (a) myocardial degeneration *per se,* which might be compared to a rubber band which has been taut around a book too long. (b) Obliterative diseases, I refer to myocardial thrombi or anemia. (c) Degeneration of certain specialized portions of the muscles, (bundle of His).

(a) Past blood pressure readings, headaches, throbbings, dizziness and fainting, volume of urine day and night, all so far as such answers are practicable. Oedema, whether A. M. or P. M., ankles or under eyes, thoracic pain, time of onset, what relieves it, etc. General symptoms of decompensation as appear elsewhere.

(b) Pain: Was it sudden? Did it radiate? If so, where? Was it controlled by nitrites? If not, were large doses of morphine necessary? How long did the pain last? Did it recur? Temperature, jaundice, etc.

(c) Have you had faint or fainting spells, dizziness, consciousness of slow pulse? If so, would exercise speed up its rate?

As to the past history in such cases, the matter of the chronic diseases are paramount, namely, hypertension, nephritis—dry or wet—syphilis, rheumatic fever, tonsillitis, septic teeth loom up here with the same importance as elsewhere.

Group 3. *Disturbances of Function as a Result of Toxemia or Neuroses:*

Are you nervous? Does your heart palpitate with slight cause? Sweats? Appetite, etc. (Goiter.) Do you have spells of very fast palpitation which come on without warning? Do they suddenly stop? Do you know of any trick that will stop the palpi-

tation? (Paroxysmal tachycardia.) Do you unduly suffer exhaustion, nervousness, headache, pain in the chest abdomen or extremities? Indigestion, constipation, backache, dyspnea, insomnia and palpitation? Past history in this group should deal primarily with questions related to possible focal infections, goiter and the syndrome commonly referred to as "shell shock."

Physical Examination of the Heart

(Expose the entire chest)

Inspection:

(1) Color—Blue, red, icteric, pale, pasty.

(2) Oedema and Enlargements—Where? Thyroid, abdomen, size of, compare with body in total.

(3) Heavings and Pulsations as related to aorta, apex, precardium in general, arteries in general, vessels of neck.

(4) In general—Exophthalmos, tremors, clubbings of fingers, nodding of head, gait.

Palpitation:

(1) Pulse—Rate, volume, compressibility, rhythm, radial as compared with jugular, (block). Is rhythm affected by breathing, by exercise, skip beats or absolute arrythmia?

(2) Location of apex—Furthermost out and down point that palpating finger is raised. Fifth interspace, inside the nipple line—should be checked by percussion of left border.

(3) Thrills—Where located.

(4) Oedema—Whether soft, woody, time pitting remains.

(5) Arteries—Hard, tortuous, nodular, amount of pressure necessary to shut pulse off at wrist.

(6) Palpation for liver, abdomen for fluid.

Percussion:

(1) Dullness to right and left of midsternal line. Right border 3 c.m. from midsternal line in fourth intercostal space. Left border 8½ c.m. in fifth intercostal space.

(2) Dullness over arch aorta. 5 c.m. in second intercostal space.

(3) Base of lungs.

Auscultation:

(1) General quality of endocardial sounds. Relation of first to second sound.

(2) Murmurs—Standing and lying down; before and after exercise; where best heard; if transmitted—where? Relation of to systole and diastole. Precordial friction rubs.

(3) Aortic and Pulmonic Sounds—Accentuation of either; their relation to each other.

(4) Counting of pulse at apex with stethoscope while assistant counts at wrist. Pulse deficit.

(5) Response to exercise—Take pulse and blood pressure, swing ten pounds of dumb bells from between legs, over the head, fifteen times in thirty seconds. Resume the posture in which original readings were made. If pulse and blood pressure do not return to original readings in two minutes, lack of cardiac reserve may be suspected.

(6) Blood pressure—Systolic and diastolic. The latter to be taken in the fourth phase. (The point where the click changes to a dull thud.) Most important as silence is 5-10 points below.

A drop of 6 to 8 in systolic pressure incident to changing from reclining to standing, denotes myocardial insufficiency. Twelve points increase systolic pressure over the prescribed reading for the individual, means hypertension; no normal over 150 c.m. One hundred and ten is hypotension. Normal diastolic pressure does not exceed 94 m.m. Blood pressure in children normally ranges from 103/70 at 10 years to 119/79 at 19 years.

Temperature observations: Leukocyte counts—Urinalysis—Blood urea estimation —Wassermann and X-ray all are important and valuable sometimes: one or more are always necessary.

There are many details that I have omitted in the outline of physical examination of the heart as presented. However, I have made no effort to make this an exhaustive study. Maybe many more should have been added. Be this as it may, it is my feeling that if one can not diagnose his cardiac case on the outline as given, it just can not be done. Furthermore, I have purposely omitted congenital and other rare conditions for reasons as given.

REDUCTION OF MORTALITY AND MORBIDITY IN CHILD BIRTH *

By G. G. HODGES, M. D.
Mt. Hope, W. Va.

THERE is no physician who enters the hearts of his patients so deeply as the physician who attends the parturient woman. He is loved and trusted far more than the doctor who renders less intimate services, however important they may be.

Statistics show that mortality and morbidity is much less when handled by careful and competent men; therefore, it behooves us, especially those of us who are doing general practice, to become more familiar with prophylactic measures, and especially those prophylactic measures which will prevent a few complications that are causing most of our deaths in child bearing women —namely, eclampsia, hemorrhage and sepsis.

De Lee states that more than twenty-five thousand women in this country die annually; six to eight thousand from sepsis, five thousand from eclampsia and four thousand from hemorrhage.

The reduction of mortality and morbidity can be accomplished by better technic on the part of the physician and better hygienic understanding on the part of the laity. Our greatest improvement in recent years has been in preventing and treating eclampsia. One lying-in hospital (Davis) in New York reported one case only in 5400 that received prenatal care. De Lee states that there was not a death in 4,000 cases from eclampsia in those that received prenatal care. Other hospitals report similar statistics. Wilson (Europe) had only three deaths in 3,500 cases from all causes, and none from eclampsia, hemorrhage or sepsis. Statistics show more than three times as many deaths where there is no prenatal care. Sixty per cent or more of our gynecological practice is the direct result of poor obstetrics. It is said, at least that 75 per cent of our mortality in childbirth is preventable by intelligent and painstaking antenatal care and better obstetric methods.

Antenatal Care—A general physical examination, both external and internal, should be made monthly up to about the sixth month and oftener thereafter. It is not advisable to make vaginal examinations during the last month of pregnancy, unless imperative.

Urine and Blood Pressure—This should be taken regularly and a rise above 140 or 145 systolic indicates that a thorough study should be made. A complete urinalysis should be done. Failing to do these two simple things may expose the prospective mother and her baby to real danger. The "sink test" is too often made. By routine blood pressure taking and urinalysis, information is gained whereby we can greatly reduce our mortality from toxemias. There will be a small per cent of toxemias in spite of any known prenatal care.

Wassermann Test — This has become a recognized procedure in maternity hospitals, and perhaps may soon become a routine practice among general practitioners. Practically all mothers giving birth to syphilitic babies will show a positive reaction. However, authorities differ in regard to this percentage. This test should be made in all cases of repeated abortion, or if there are any other reasons to make you suspect a syphilitic infection. By the proper treatment of these syphilitic mothers, your patient will be in much better condition for delivery and your still-births reduced to a minimum. Some authorities claim neosalvarsan is to be preferred to salvarsan. In nephritis and cardio-vascular diseases bismuth preparations are preferred as they are less toxic, otherwise the treatment is the same as for any other syphilitic.

External Pelvimetry—Pelvic measurement is very much ignored. We cannot practice

* Read before the Fayette County Medical Society, February 8, 1927.

scientific obstetrics without knowing something about the diameters of the pelvis. Statistics show in contracted pelvis, where there is no antenatal care, about 50 per cent fetal mortality, and where there is antenatal care about 12 per cent. There are twelve measurements of the pelvis, four of which are most commonly used, viz: interspinous diameter, intercristal diameter, between the great trochanters, and the external conjugate. *Interspinous*—widest distance between the anterior superior iliac spines. Normally this should be between 9½ to 10½ inches. *Intercristal* — The widest interval between iliac crests. Normally is from 10½ to 11½ inches. Between the *Great Trochanters*—This is the widest distance between the external surface of the great trochanters of the femur. Normally about 12 2/5 inches, even if 11½ inches does not indicate pelvic contraction. *External Conjugate* — Made from a depression just below the last lumbar vertebrae to the mons-veneris. Normally about 8 inches. Clinically this diameter is unreliable; however, below 6¼ inches the pelvis is invariably contracted.

Internal Pelvimetry or Vaginal Examination—This is essential in primaparas and others where there is a suspicion of pelvic deformity. Of course the preparation of patient and physician's hands, should be the same as preparing for an examination in labor. A number of instruments have been devised but the educated hand surpasses all. *The objects of a Vaginal Examination*—First, to see if pregnancy actually exists; second the period of gestation; third, viability of the fetus; fourth, presentation, position, engagement of head; fifth, in addition to examine the soft parts, congenital defects, pathological growths which may obstruct labor, also injuries resulting from previous deliveries, and the possibility of placenta previa.

Focal Infection—Puerperal infection is not always due to the physician's faulty asepsis. In view of the commonly accepted phases of focal infection who can say that puerperal sepsis is not another manifestation requiring only the traumatism of labor to kindle the fire? We remove infected tonsils and many times prevent appendicitis, or remove an infected appendix and prevent infection of the gall bladder. Why not clean up some of the foci of infection during pregnancy and prevent puerperal sepsis? Kidney damage may result from diseased teeth and gums and in this way be a cause of eclampsia. The popular idea that extracting teeth will cause abortion is fallacious.

Certain Heart Conditions—Marriage and pregnancy are not justifiable in cases of myo-carditis and auricular fibrillation, as these conditions would be indications of abortion. Cases of mitral stenosis with no evidence of myocarditis or previous heart failure are capable of bearing one or two children with safety if watched carefully, but it must be remembered that each pregnancy damages the heart. These patients must receive careful attention. Look for shortness of breath, palpitation, precordial pain and rales in base of lungs, as these are signs of cardiac insufficiency.

Pyelitis and Cystitis—In these cases there is an increased possibility of anemia, abortion, toxemia and infection at childbirth. A large majority are colon bacillus infections. The patient should be given large doses of urotropine with acid sodium phosphate in order to keep urine acid in reaction. This should be kept up for ten days, then sodium bicarbonate, or acetate of potassium for one week, which thoroughly alkalinizes the urine. Only in rare cases will ureteral catherization be necessary.

Asepsis and Antisepsis—The most important of all in connection with prophylaxis during labor is rigid attention to asepsis and antisepsis. You know what a septic infection means in the production of uterine and pelvic diseases. Mild puerperal infections are apt to pass unrecognized by the physician in charge and later the patient passes into the hands of the gynecologist for a cure of chronic uterine or peri-uterine inflammation, which had its origin in an unnecessary, if not careless vaginal examination. When statistics show 6,000 to 8,000 women die annually from sepsis and the number that become infected, but do not die though disabled physically, is almost beyond estimation, this goes to show we do

not pay enough attention to asepsis. A physician should not be allowed to attend a woman in labor without using rubber gloves.

Eclampsia—Naturally our first endeavor is to avoid this condition by careful prenatal instructions as how to live. Aside from this is to detect it in its incipiency. Watch for symptoms—Increased irritability, insomnia or drowsiness, headache, visual disturbances, the urine and blood pressure. In the majority of cases the blood pressure is more important than urinalysis as there will be a rise of blood pressure prior to urinary symptoms. With a blood pressure below 140 systolic and other symptoms absent there is very little danger. A pressure that is gradually or abruptly rising should put us on our guard. With urinary changes and other symptoms, danger ahead becomes imminent.

Treatment of Pre-Eclampsia—These patients should be put in hospital. Restriction of diet (non-protein, salt free), warm baths, pushing of fluids, bowels kept active by saline laxatives, output of urine should be measured, chemical and microscopical examination of urine made daily, blood pressure should be taken twice daily. 20 c.c. of 10 per cent solution of magnesium sulphate intravenously should be given when the systolic pressure is above 150, and repeat if blood pressure rises and other symptoms increase. Interruption of pregnancy is indicated only when symptoms persistently recur and do not respond to treatment.

Treatment of Eclampsia—Morphine to control convulsions. Elimination—Bleeding —20 c.c. of a 10 per cent solution of magnesium sulphate intravenously as soon after convulsions as possible and repeated every hour until convulsions are controlled. Blood pressure should be taken every hour after first convulsion, and if blood pressure rises nearing the point of first convulsion repeat the dose. Also repeat if convulsion recurs. Restless patients should be given 20 grains of chloral hydrate and 60 grains of sodium bromide by rectum. Oxygen inhalation may be given after convulsion. If patient is in second stage of labor and proper progress is not being made you may apply forceps or do

Physicians differ as to the advisability of cesarean section in treatment of eclampsia.

Preparation of Patient for labor as well as that of the physician is very important in order to prevent infection. Shave the pubic hair, patient should be given an enema even if bowels have recently moved, and a shower bath should be taken. In a tub bath there is danger of infection from her own dirt. The external genital organs should be washed thoroughly, followed by a solution of bichloride—1 to 5000. Many recommend painting inner side of thighs, lower abdomen, and external genitals with a 5 per cent mercurochrome solution. One dram of 4 per cent mercurochrome solution is instilled in the vagina and worked well into the mucosa. Repeated every 6 or 8 hours.

Rectal instead of Vaginal examination is a routine in some maternity hospitals. Rectal examination precludes the possibility of carrying vaginal germs into the cervix. Rectal examinations can be done quickly because it eliminates time consumed in scrubbing of hands. This is important in large obstetrical clinics.

Use of Pituitrin—Care should be used in administering this drug or grave damage may be done to both mother and child. Uterine rupture and laceration to mother, injury to brain tissue of child, also asphyxiation. Never give pituitrin in first stage of labor or when there is any mechanical obstacle to natural delivery, as contracted pelvis, malposition of fetus, tumors, etc. It is not advisable to administer this drug in cardiac diseases with high blood pressure. Small doses, 3 or 4 drops, should be used and repeated if necessary. I always have my patient partly anesthetized prior to giving this drug so I can control pains, as I find many patients very susceptible to pituitrin.

Lacerations—Lacerations cause much of our morbidity. Often severe hemorrhage takes place and they also open a good avenue for infection. Cervical laceration may be caused by malformation, malposition or disproportion, but it is safe to say that most cervical lacerations are caused by malicious manipulation or faulty instrumentation, or both. Serious injury to cervix should not

occur in normal labor. As to when repair should be made depends on the condition of patient and her environment. Under favorable conditions primary repair should be performed; however, this often cannot be done successfully in private homes. The patient who sustains a cervical laceration should be informed and should be advised to have repair made.

Laceration of Anteriar Vaginal Wall—Most of these are preventable. These lacerations should have immediate attention owing to a tendency to bleed and their subsequent influence on bladder function.

Laceration of Perineum — Anatomically speaking this is incorrect as it includes posterior vaginal wall, perineum and rectum. These are divided into three degrees: First, second, and third, the degree depending on the extent of the laceration. Laceration is almost inevitable in primiparas. Protective measures, we were taught, should be used. Such are judicious uses of anesthesia, skill if you are using instruments, care in delivering the head, and great care in delivering the shoulders. In this way we can minimize the extent of the laceration. Episiotomy should be done when indications are that severe laceration of perineum is inevitable. Episiotomy provides a clean cut surface for sutures. When suturing the aim must be to strictly follow anatomical lines. Muscle to muscle, fascia to fascia, and skin to skin. Great care as to asepsis should be used. Tags cut off, leave no pockets for the collection of stagnant secretions. Chromicised catgut sutures are used by most obstetricians.

Hemorrhage—Hemorrhage is third in importance as a cause of maternal mortality. Hemorrhage before or after childbirth is always a matter of deep concern. Some blood accompanies every delivery, an average of 10 to 12 ounces. When above a pint it is to be regarded as abnormal. Abnormal bleeding takes place in about 1 per cent of deliveries. I might mention hemorrhage in abortion. In abortion occurring during the early months—up to the third month, packing the cervix and vagina will control the hemorrhage. After the third month it is better to pack the entire uterine cavity. This not only controls the hemorrhage but stimulates uterine contraction and hastens separation of the placenta. Gauze may be removed after 24 hours, usually bringing away placenta and membranes. Digital removal of placenta or curettement will control bleeding, care being used not to perforate uterus with curette.

Placenta Praevia — Varieties: Central, when os is completely covered after dilatation; partial, when os is partially covered after complete dilatation; lateral, or marginal, when placenta does not reach beyond the margin of the os when completely dilated. Greatest danger to mother is hemorrhage, sepsis and shock from version.

Treatment of Hemorrhage — When the cervix is rigid it is better to tampon the cervical canal and vagina. This will cause softening of cervix and dilatation. You will find the majority with a soft cervix. With the cervix soft, and the os will admit two fingers, you have a good way of controlling hemorrhage by bringing down one leg of the fetus, which controls the hemorrhage by acting as a tampon. The first and second stages of labor should be made as short as is consistent with the integrity of the mother's soft parts. Manual removal of the placenta is necessary only when after delivery the hemorrhage still persists. Sometimes bleeding continues after the placenta is delivered. When this occurs the treatment is the same as after any placenta is delivered.

Post-Partum Hemorrhage— It must be remembered that hemorrhage predisposes to infection. The constitutional symptoms if seen once can never be forgotten. The pallor, rapid and feeble pulse, restlessness, air hunger, pinched face, dry lips, desire to be fanned and to have windows open. You should not leave your patient for one hour after delivery of placenta. Frequently inspect the vulva and palpate the fundus. Notice the level of the fundus and its consistency. This is very necessary as a safeguard. Bleeding from a laceration is bright in color and continuous. While from a partially separated placenta it is usually clot-

ted and increases when the uterus contracts. When there is a distinct interval between the birth of the child and the hemorrhage, the possibility of injury to the birth canal can be ruled out. The usual cause of post-partum hemorrhage is a uterus that does not contract, or one that contracts very feebly and must be made to contract. Pituitrin and ergot are indispensable. You get quicker action from pituitrin. Always have a dose of pituitrin in your hypodermic syringe. Be ready for a hemorrhage. Give your pituitrin or ergot, or both, and make firm pressure on the uterus. Elevate the hips. In my experience consisting of about 1400 cases of confinement, and I presume I have had about the average number of hemorrhages, this has answered the purpose every time.

Burgess' method, which is endorsed by DeLee, for hemorrhage in the home is as follows: Place your left hand well up the abdomen and by rapid pressure downward expel all blood clots from uterus and vagina. Immediately this is done, take a sterile towel, set aside for the emergency, in the right hand and crowd it against the perineum, closing the vulva orifice and by pressure from above and from below check all bleeding. Do not massage the uterus but maintain firm pressure. Then direct the elevation of the foot of the bed and the giving of pituitrin and ergot.

Hemorrhage may be controlled by packing the uterus. Some prefer 5 per cent iodoform gauze as it liberates iodine, acting as an antiseptic, also irritates, which stimulates contraction. Some claim you may get a toxic action from iodoform, therefore, prefer plain gauze. Gauze should be of a convenient width to facilitate introduction.

You should see your patient daily for six days, then every other day for four or five visits. She should not be discharged until she has fully regained her health. In many of my cases if I gave the proper post-natal care before I discharged the patient, I should be giving both ante-natal and post-natal care at same time.

"Until ante-natal supervision is accepted by patients and their advisers as the invariable duty of the professional attendant engaged for the confinement, we shall never make substantial progress towards reduction of maternal death and injury."

SUMMARY

Suggested Propaganda to the Public
(J. M. H. Rowland, M. D.)

1. Childbearing in this stage of our civilization is no longer necessarily a physiologic process.

2. As soon as her condition is known, the pregnant woman should report to her physician.

3. Careful supervision at relatively short intervals is necessary to prevent many of the complications of pregnancy and childbirth.

4. Headache, edema, constipation or hemorrhage of any degree mean trouble if not relieved.

5. Routine examination of the urine and routine blood pressure measurements should be a part of the examination at each visit.

6. Careful physical examination, including examination of the pregnant uterus, and measurement of the pelvis are necessary.

7. Careful preparation for delivery often saves trouble in labor.

8. The physician who desires no record of the patient's history, who does not require her to visit him regularly and who does not wish to know anything about her until she is in labor is not the physician who should attend her.

IN CONCLUSION

1. Success in obstetrics depends upon ante-natal, intra-natal, and post-natal rules.

2. The secret of success in obstetrics is a clean patient, clean attendant and clean instruments.

3. Obstetrics offers as great or greater prophylactic fields than any other department of medicine.

4. Ante-natal care becomes preventive obstetrics and intra- and post-natal care become preventive gynecology.

GAS GANGRENE—A SUMMARY *

By BLANCHE B. MILLER, M. D.
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THE report of a case of gas gangrene at a recent medical meeting occasioned questions concerning the latest methods in diagnosis and treatment. As an attempt to answer these questions this paper was requested.

Gas infection is more frequent than ordinarily supposed, but not all lesion producing gas are virulent. At the present time about twenty-five anaerobes and from ten to twenty aerobes have been found to produce gas in wound infections. Of these B. welchii, B. fallax, and B. aerofetidus are the greatest gas producers; while B. edematiens and Vibrion septique produce less gas but more edema. The latter are more virulent. All of these organisms are sometimes and some of them are always present in human and animal feces and hence contaminate all manured soils. The wonder is that serious gas infection is not even more frequent than it is.

But since the more virulent organisms of this group are anaerobic, gas infections rarely if ever develop in any but deep wounds sealed against the air, and not in these if blood supply and tissue oxidation is good. The blood supply may be defective because of destruction of tissue by the injury, edema of the injured tissues, tight splinting or prolonged application of tourniquet, tight packing or obstructive dressing, hemorrhage, shock and cold.

Clinically, these infections if virulent are marked by a rapid course, death often ensuing in a few hours after the onset of definite symptoms. Symptoms usually appear on the second or third day after the injury. There is severe pain in the wound, fever, rapid pulse, and marked restlessness but maintained intelligence to the end. There is a peculiar color of the skin, first about the wound, but spreading and changing rapidly. There is first pallor, then a dirty creamy tint followed rapidly by irregular purplish areas which enlarge and coalesce, and finally a yellowish green. The odor is characteristic but is hardly describable except that it is extremely feotid and nauseant. If exposed muscle can be observed in the wound it will go through the color changes of brick red and green to black. There is always some swelling and some crepitus of tissues about the wound, but the latter does not always appear early.

Often, because of this late appearance of detectable gas in the wound area a number of men feel that the earliest data for diagnosis may be obtained by X-ray. Bubbles of gas deep in the wound may be thus demonstrated hours before the information may be obtained in any other way.

Fortunately the anaerobic character of the infection enables us to forearm ourselves against it. Wounds suspected of contamination by soil or feces should be opened up and tissues showing damaged blood supply cut away. Avoid tourniquets where possible, and if they must be used, apply them briefly. Do not pack, bandage or splint as to interfere with the blood supply. The Carrell-Dakin technique is almost universally recommended for the preparation of these wounds.

Of wound antiseptics those which liberate nascent oxygen in the tissues are of most value. Again the reports are almost unanimously in favor of Dakin's solution while its substitutes are condemned. As to methods of application, hourly irrigation of the wound seems to be preferred.

Even after a diagnosis of gas infection has been made it is not too late to remove necrotic and diseased tissue. The infection seems to have an affinity for muscle and all infected muscles should be cut away. Even if whole muscle groups must be sacrificed, this is better than amputation. After cleaning up the wound perforated tubes are in-

* Read before the Barbour-Randolph-Tucker Medical Society, November 23, 1926.

serted deep into every angle for irrigation with Dakin's solution hourly. Numbers of cures are reported with no further treatment.

During the World war an antitoxin was developed but owing to the diversity of the infective organism, perhaps, it did not succeed as expected. To our knowledge but one laboratory has continued to prepare an antitoxin since the armistice. This is a tetanus perfringens antitoxin prepared by the Lederle Laboratories. The recommended dose for prophylaxis is 10 c.c. and curative 200 c.c. The latter is to be given intravenously and repeated in six to eight hours although there seems to be but little benefit from a dosage totalling more than 500 c.c. The cost is about that of tetanus antitoxin. So far as obtainable, reports of the use of this antitoxin have been favorable but not enthusiastic, no doubt for the reason that it is only effective in the B. welchii type of infection.

INFARCTS OF THE KIDNEY *

By B. B. WHEELER, M. D.
(Original Paper)
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INFARCTION of the kidney is of two distinct types: *septic infarcts*, in which are included both the unilateral infarctions of metastic septic kidneys and those infarcts which occur in the course of a general bacteremia; and *non subturative infarctions of the kidney*, also sometimes designated as *bland* or *hemorrhagic*.

Consideration of septic infarcts opens up the wide question of renal infection, and moreover, the subject has received extended investigation by surgeons and urologists for a considerable length of time. Aseptic renal infarction, on the other hand, "is a condition more familiar to the pathologist than to the clinician, as the paucity of clinical literature on the subject attests."[1]

The literature concerning non-septic renal infarcts was very thoroughly gone over some fifteen years ago by Halperin[2], and very little has since been added to it. Halperin could find but ten cases beside his own, and even today the number has been but slightly increased. "Renal infarct, as a clinical entity, is extremely rare, and while small infarcts are not infrequently found postmortem, they are rarely manifested clinically."

The first case diagnosed was that of Traube, which he reported in 1856. Four more cases reported by various authors were diagnosed postmortem, but the first clinician who made a thorough study of this condition was apparently Rudolph Schmidt, who detected three cases in living patients whom he saw in Neusser's clinic.

Halperin groups these cases from the literature according to their etiology as (1) those due to arterial embolism, the result of a valvular lesion of the heart; (2) those due to arterial embolism, the result of an infectious process other than endocarditis, and (3) those due to local arterial disease, with thrombus formation. The last group has but two representatives, von Recklinghausen's case, in which the thrombus formation was due to injury sustained by the renal artery, and Halperin's own which resulted from an obliterating endarteritis of the renal arteries and their branches.

In von Recklinghausen's case the patient was a boy of eight, who died eight days after receiving severe internal injuries as the result of a fall. Autopsy showed a circular injury to the coat of the left renal artery, below which was a large red thrombus. All the branches of the artery were likewise thrombosed, and the entire kidney was necrotic. This case established two important points: That kidney infarcts may be produced by trauma, and that the formation of typical necrotic infarcts is accomplished in a relatively short time.

Renal infarction may be defined as a morbid process due to obstruction of the circu-

* Read before the Raleigh County Medical Society, January 27, 1927.

lation in one or more portions of the kidney. Its immediate cause is the shutting off of the blood supply to smaller or larger areas of parenchyma. The great variation in the form of these infarcts is due to the radiating character of the larger blood vessels, each supplying a wedge-shaped piece of parenchyma. Kelly and Burnam[3] give the causes of infarction as (1) operative interference; (2) trauma, that is, tearing of a blood vessel; and (3) a pathologic process such as thrombosis or embolus. The form of the infarct varies according to the seat of obstruction. If this is in one of the large vessels at the hilum the infarct will be wedge-shaped and of great extent, the base of the wedge being in the periphery, the apex toward the pelvis, the width being greater at the lateral border than at the hilum.

The area may be very irregular, so that a more or less typical wedge-shape can be made out only with difficulty, but once formed it will quickly become grayish in color, or present a "glary" appearance, due to the anemia of the included tissue. This is soon followed by softening, a hyperemic zone of compensatory circulation surrounding the affected area, and coagulation necrosis rapidly follows.

The site of origin of most non-suppurative kidney infarcts is in that portion of the circulatory system which lies between the left side of the heart and the bifurcation of the renal artery. They most commonly arise during the course of "rheumatic" left-sided valvular disease, and notwithstanding their non-suppurative character, have been observed in association with chronic bacterial endocarditis. According to Chetwood[4] such cases may run a long course, even a year or more, and if a careful blood culture is made, the examiner may recover the small streptococcus, an organism which does not cause suppuration, yet is capable of forming typical infarctions, not alone in the kidney, but in the spleen and other organs as well. Though thrombosis in the renal artery or its branches may be the result of trauma, or due to acute infections, chronic arteritis, atherosclerosis, or periarteritis nodosa, embolism is a more common cause of infarction. Of sixteen cases collected from the literature by Aschner chronic valvular disease caused the embolism in ten, of which two were aortic and eight mitral. The mitral lesions were stenotic, and in two autopsies, thrombi were found in the left auricle.

The mechanism by which thrombi are produced in the course of valvular disease, has been discussed by George Baehr[5] in a consideration of the glomerular lesions of subacute bacterial endocarditis. The bacteria of the vegetations "show a very marked tendency to hang together in small firm clumps which usually cannot be broken up," even when the test tube is vigorously shaken. "It is quite conceivable therefore, that large numbers of these clumps are constantly being washed off the vegetations by the blood current, and being just small enough to pass the vasa afferentia in the kidney, become lodged in the capillary loops of the glomeruli."

Embolic phenomena in valvular disease have received a good deal of attention from Libman[6] during the course of his work on valvular heart lesions. He does not believe that these defects can of themselves be held responsible for the occurrence of emboli capable of producing symptoms which can be clinically recognized, but when such symptoms do occur in patients suffering from chronic valvular disease, but in whose blood no bacteria can be demonstrated, he regards it as strong presumptive evidence of the previous occurrence of a rheumatic infection, which has been followed by bacterial invasion, the lesion caused by the bacteria having already progressed to spontaneous healing.

In this connection Aschner points out that we should not forget that while infarcts which arise in the active bacterial stage do not suppurate, nevertheless the emboli producing these lesions are not aseptic in the strict sense of our classification. "Aseptic emboli may come from thrombi in the pulmonary veins or the left auricle; from atheromatous lesions, ulcers, fibrinous deposits, thrombi or calcified vegetations on the mitral and aortic valves, or from atheromatous lesions of the aorta. Paradoxic

emboli passing from some peripheral vein through an open foramen ovale or open septem, may produce infarctions."

Rathbun[7] has reported a case of renal infarct where no valvular heart lesion was present. There was a history of gonorrhea four years previously, and the teeth and tonsils were in a septic condition, but the author merely cites these as possible foci of infection. Urologic findings were practically negative, only an enlargement of the left kidney being evident on palpation; intense lumbar and renal pain was the chief complaint. As the patient clamored for relief an exploratory nephrotomy was undertaken, the left kidney was split, and four "lumps," ranging in size "from a hickory nut to an English walnut and about the consistence of a uterine fibroid", were exposed. No attempt at removal was deemed wise at that time, but four days later severe hemorrhage necessitated a rapid nephrectomy, from which the patient finally recovered. The author suggests that the condition found in this case may be more prevalent than is usually supposed, and that it might be very well kept in mind when one is called upon to diagnose obscure renal or lumbar pain. Despite the relatively happy outcome of this particular case, however, he does not advise nephrectomy, except as a last resort.

Not infrequently renal infarction takes place without causing the patient any pain, so that its presence may be wholly unsuspected. Only in rare instances is blood visible to the unaided eye in examining the urine, and even if there be a slight hematuria, it will be strongly suggestive of a tuberculous nephritis, "which by its sudden onset may simulate bland infarction." In typical cases, the diagnosis is—according to Chetwood—not usually difficult. "The onset may occur with vomiting, pain in the loin of a more or less dull character, but sometimes radiating. Urinary symptoms may be present, namely suppression of urine with later appearance of polyuria. After careful centrifugation, at times, a few scattered red blood cells may be found in the urine."

The results of urinalysis should be judged only after a detailed comparison with previously-made analyses, as it is very easy to confuse the condition with a passive hyperemia of the kidney. If the small streptococcus already mentioned, can be demonstrated in the blood stream, and the cardiac condition is characteristic, the diagnosis can be more easily established. When the infarction takes place on the right side, it may readily be mistaken for appendicitis or cholecystitis, and it is especially important to differentiate bland infarction from unilateral septic infarction, as such a mistake might lead to surgical extirpation of the kidney. Aseptic renal infarction is essentially a medical disease, and to subject a patient suffering from grave cardiac lesions to the strain of operation, is more than likely to prove fatal.

Still another differential point is the possibility of confusion with infarction of the spleen, and this, as Chetwood truly says, "is a difficult matter, as the latter is so rarely diagnosticated. Clinically, however, an attack of left-sided pain, in the presence of a spleen enlarged to percussion and palpation in conditions such as leukemia, polycythemia (Osler's disease), pseudo-leukemia, etc., should suggest the presence of a splenic involvement."

Halperin does not coincide with Chetwood's views as to the ease with which the diagnosis can be established. He quotes Leube as saying: "The diagnosis can rarely be made. The condition may be surmised with some probability when, in the presence of a possible source for the formation of emboli and infarcts, sudden pain develops in the region of the kidney, and albumin, blood or morphologic elements indicating nephritis appear in the urine."

In the diagnosis of renal infarct not only must all conditions external to the kidney and ureter capable of giving rise to sudden and severe abdominal pain, be excluded, but we must also take account of conditions which can produce symptoms of renal colic, such as (1) torsion of the ureter in a wandering kidney; (2) paroxysmal exacerbations of chronic nephritis; (3) calculus colic; (4) pseudocolic, which may be due to (a) plugging of the ureter with tuberculous or neoplastic debris, blood clots or hydatids;

(b) by obstruction due to catarrh of the ureteral mucosa, and (c) by functional spasm of the ureter.

Pain of renal origin is usually limited to the kidney region proper; it will be continuous and the kidney will be tender on palpation, while the urine will show albumin and casts. Ureteral pain, on the contrary, will radiate intermittently along the course of the ureter, and palpation in that area will reveal tenderness; hydronephrosis will also be demonstrable.

But even when the examiner has assured himself that the pain is renal and not ureteral, he must still make certain that it is not due to a twisted ureter belonging to a "floating" kidney, or to an acute exacerbation of chronic nephritis. Halperin offers the following points as of especial value in making a positive diagnosis of renal infarct: (1) Sudden onset of intense pain *while the patient is at rest;* (2) sudden appearance of albumin in the urine; (3) kidney tenderness, and (4) the presence of valvular lesion of the left side of the heart.

In his opinion, if there be much blood in the urine, it is an indication pointing away from infarct and decidedly toward nephritis, or malignant renal neoplasm, though if malignancy is present, at this stage it is frequently possible to palpate the tumor. Nephritis is more prone to induce high blood pressure and marked uremic symptoms, and the pain resulting from it is never so severe as that accompanying infarction.

When the existence of a renal infarct is signalized by severe pain, the attack will usually diminish in the course of twenty-four hours, tending to localize posteriorly in the lumbar region, though occasionally from the beginning of the attack the patient will refer the pain constantly to the back and flank. Lumbar percussion will always cause pain, and extreme tenderness and muscular rigidity will closely simulate an acute intraperitoneal disturbance. Gastro-intestinal symptoms are always prominent. Frequently there will be persistent nausea and vomiting, and the rigidity and distention of the abdomen will be accompanied by constipation or obstipation, while fever and leukocytosis can readily deceive the examiner into believing that he has to deal with an inflamed gall-bladder or appendix.

Three factors are probably responsible for the location and character of the pain: (1) Increased intracapsular pressure; (2) injury to the renal plexus along the course of the blood vessels, and (3) perinephritis. "Localization depends on the position of the kidney and the nerve trunks affected. Thus the areas of skin hyperalgesia correspond to the eleventh and twelfth thoracic and first lumbar nerves, and pain may occur in the distribution of the iliohypogastric nerve." In four of the autopsies reported by Aschner, perinephritic hemorrhage, edema or thickening were noted.

In the majority of the reported cases albuminuria is the urinary abnormality most frequently mentioned. Sometimes no urinary changes are observed, but marked diminution is very common, and occasionally almost complete suppression. Bladder function too, may be disturbed, varying from frequency and urgency to difficulty in voiding or actual retention. Halperin states that suppression of urine may, in mild cases, be followed by a transient polyuria, or total anuria.

While a careful consideration and comparison of all the diagnostic points just enumerated may aid in establishing the existence of renal infarcts during life, the fact remains that the majority of these lesions are hidden from the knowledge of both patient and physician, and are to be recognized only at the postmortem examination.

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THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

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EDITORIAL

Anterior Poliomyelitis

Apropos of the trend of current medical opinion that the digestive tract is the portal of the virus of acute anterior poliomyelitis (Aycock W. L. The Epidemiology of Poliomyelitis with reference to Its Mode of Spread. *J. A. M. A.*, 7, 10, 1926) the writer emphasizes the hypothesized statement made in a paper read before the West Virginia Medical Society in 1917, that a poluted potable water supply is an etiological factor in this plague of childhood. The evidence is at least persuasive that sporadic and endemic cases, which may or may not cause an epidemic by contact, comes from the soil either through drinking water or dust inhaled.

The rural physician has the advantage of his urban conferee in his opportunities for observation of the epidemiology of this disease; especially in the number of sporadic cases in which the factor of contact can be eliminated. Moreover, the seasonal analogy of poliomyelitis to enteric fevers is more apparent to the country practitioner. Epidemics of all diseases are more outstanding in sparse than in concentrated populations; environmental influences, especially the water supply, are more easily determined in rural communities.

While epidemics of typhoid fever and poliomyelitis are generally preceded by long periods of excessive heat, there is a similar cyclic periodicity of the two diseases of which there has been no adequate explanation. Why should there be long periods of abeyance, under similar climatic influences, followed by sudden flares of epidemics?

The seasonal incidence and the limitation of mild and abortive cases to the intestinal tract are significant facts. Were the upper respiratory tracts the primary focus of infection, the climatic occurrence would correspond to other diseases in which the mucous membrane is made vulnerable by an inflammatory reaction to cold.—By A. S. BOSWORTH, M. D.

Therapeutic Fears

We have been recently reminded of some of the teachings of the old masters in the use of veratrum viride in the treatment of convulsions of uremic origin. This potent remedy has been almost discarded through fear of its action on the heart. We do not claim it to be harmless, but properly given within bounds of its limitations there is nothing so magical as its effects in the control of convulsions, and that limitation is its physiological manifestation on the pulse.

If preceded ten minutes by one-fourth grain of morphia twenty minims can be given hypodermically without fear of alarming results, and if within one hour the pulse and blood pressure have not been perceptibly reduced the dose can be repeated.

When the pulse reaches fifty or even forty the spasm will cease, and by keeping the patient perfectly quiet and in the prone position, it will be only a few hours until you can proceed with your chosen methods of elimination. The initial dose of veratrum should always be preceded by morphine, and if necessary inhalations of chloroform. Ether should not be given.—C.A.R.

Journal Advertisers

There is one point that your new secretary-manager would like to bring to the attention of the members of the state association at this time. The point is this: that the *West Virginia Medical Journal* can easily be made, with your assistance and support, into the best state medical publication in the United States.

The reading material in your state magazine can hardly be improved upon. Your secretaries, or most of them, are prompt in sending in their component society reports to the *Journal* office. In Dr. C. A. Ray, you have an editor whose leadership is all that could be desired. In other words, your *Journal* can hardly be improved except by increasing the number of pages, by using more illustrations, and by more attractive

make-up. So it comes right down, after all, to a matter of finance.

The *West Virginia Medical Journal* is operated entirely upon its advertising. It costs between $300 and $350 per month to publish. If the advertising falls off the *Journal* must of necessity follow suit. On the other hand, if the advertising picks up, so does the *Journal.* The *Journal* runs from 26 to 28 pages of advertising every month. Give your secretary-manager 36 pages of advertising every month and your *Journal* will lead the field.

Now, how can you give your secretary-manager 36 pages of advertising every month? The answer is easy. You can do it by purchasing from and patronizing the *Journal* advertisers and by mentioning the *Journal* advertisers when you purchase.

Individually you may think it's a small matter, but collectively it's a matter of enough importance to place the *West Virginia Medical Journal* at the head of the long list of state medical publications.

Relief Work

The relief work being carried on in the office of the executive secretary for members of the West Virginia State Medical Association is a worthy service and a service to which more attention should be paid by the association members. In the past year the central office has found both permanent and relief positions for many West Virginia doctors through applications made by communities and by doctors seeking relief men and permanent assistants.

In order that the executive secretary may carry on this service more efficiently, he has asked all members of the association, who take advantage of the bureau, to keep in touch with him and to notify him when vacancies are filled. When this has not been done in the past it has resulted in no little confusion.

This relief bureau is a commendable service. It can be worked into a bigger and better service for West Virginia doctors through a little better cooperation on the part of the members.—C.A.R.

Public Policy and Legislation

The chairman of the West Virginia State Medical Association's Committee on Public Policy and Legislation called a meeting of the committee which was held in Charleston December 28, 1926. The meeting was attended by Drs. James McClung, Richwood; D. A. MacGregor, Wheeling; R. H. Walker and R. A. Ireland, Charleston. A full discussion was held on the public policies and proposed laws affecting our association. The reborn Hospital Association of West Virginia was consulted, and they concurred in the acts proposed to be offered in the state legislative session for 1927.

One bright spot in the cloud overhanging the battleground of this year was the passage of our bill for the establishment of a tubercular sanitarium in the southern half of West Virginia. We had the honor to suggest to the Senate Committee that the $216,000 earned and now held by State Hospital No. 1 be diverted to the establishment of a second tubercular sanitarium in this state. This bill became a law.

An amendment was proposed for the present workmen's compensation law making the terms more liberal for the medical men. An important change was to insure compensation fees even though a given case was entitled to care under a "list" contract. It has been found that injured cases were sometimes hurried out of "list" hospitals because, under the present law no compensation can be paid, and there is sometimes the temptation to save cost even at the expense of permanent injury. This amendment will need all the pressure that all of the profession can exert to get by the present alignment of statesmen.

An act was proposed, raising the standards of education required of midwives. The committee believes that no individual should do this major work until that individual has at least the education and training required of a graduate nurse. This standard was opposed by representatives of the State Department of Health, and the bill was defeated.

An amendment was proposed to the law regulating nurses' examinations. The amendment required that there should be two physicians as members of this board of examiners who are actively connected with the staff of some hospital. This act was lost in the mass of bills that were forgotten in the final confusion of the closing days of the legislature.

An amendment was proposed to the chiropractic law separating the chiropractors from the health council. This amendment was opposed by the executive officer of the State Health Council. In debating with him and the representative of the chiropractors before the Senate Committee we said in part that "we are contending for what we believe to be correct principle. We are consistent; we contend for the same principle this year as last. We opposed the same things last year as this year. We make no trades. The sciences on which our profession is founded are as old as civilization and just as lasting. They are inseparably linked up with our state university, our normal schools, our church, and public schools. If the chiropractors have something valuable to add to science they should put it into our state universities and medical colleges where all the world may profit. Only a cad pretends to know something that others are incapable of understanding." The bill was defeated probably because of the attitude of the state health department.

An amendment was offered to the present law protecting hotels by inserting the words, "hospitals, sanitariums and sanatoriums," so that our institutions might in some measure be protectel from those who enter with intent to defraud. This was not to apply to X-ray, labatory, or doctors' fees. By a strong concerted effort this bill was recalled in the House, after being once rejected, and passed the House without dissenting voice. Sufficient sentiment was worked up in the Senate to pass this act, but it was defeated because of the opposition of the floor leader. This senator was on the rules committee, and had sufficient influence to keep our bill in the bottom of the basket; and in the final rush it could not be called up.

One group of citizens asked of the legislature the right to pray and heal the sick by spiritual means "only." It seems to the committee that such an act might interfere with the present regulations against typhoid fever, small-pox and similar diseases. It would give protection to their system of collecting fees. The bill was defeated.

An act was proposed, making it possible for everyone injured in dangerous occupations to be treated free at the state hospitals. This service was to be extended to minors under the age of 18 whether injured or not. The bill was defeated.

Among the bills that met with our disapproval was one which proposed to limit the hours of duty for nurses to eight hours in any one day. This was defeated also.

We spoke before the Senate Committee in opposition to the Sheppard-Towner act and its application to the activities of health work in this state.

We sent numerous letters and telegrams to component societies, hospitals and individuals apprizing them of the struggles going on in Charleston during the time of the legislative session. Much valuable influence was contributed from all parts of the state, and for this the committee is very grateful. Much credit is also due to the members of our profession in both branches of the legislature. They fought valiantly, and while they did not secure the passage of all the bills they fought for, it is due our friends both within and without the profession in the legislature to give them a vote of thanks for securing the passage of the act creating another tubercular sanitarium, and for the defeat of some of the senseless and destructive legislation that might bring discredit to our state.

R. A. IRELAND, *Chairman,*
Public Policy and Leg. Committee.

OFFICIAL CALL

To the Officers, Delegates and Members of the West Virginia State Medical Association

The sixtieth annual meeting of the West Virginia State Medical Association will be held in the Greenbrier Hotel, White Sulphur Springs, from Monday, June 20 to Thursday, June 23, 1927.

The Council will convene at 3:30 o'clock in the afternoon of the opening day of the convention.

The House of Delegates will convene on the same evening at 8 o'clock.

The general scientific assembly will meet for the first time on Tuesday morning, June 21, at 9 o'clock, in the ball room.

The surgical section will convene in the Tudor Room of the Greenbrier at 8:30 o'clock Wednesday morning, June 22.

The eye, ear, nose and throat section will meet in the Card Room of the Greenbrier at 8:30 o'clock Wednesday morning, June 22.

The annual address of the president together with the orations on medicine and surgery will be delivered at a meeting open to the public at 8 o'clock Tuesday evening, June 21.

The registration department will be open in the lobby of the Greenbrier at 10 o'clock Monday morning, June 20, and remain open until 8 o'clock the same evening. Thereafter it will remain open from 8 o'clock a. m. until 8 o'clock p. m. until the close of the convention. To avoid confusion, members of the association are urged to bring their membership cards for easy identification.

Respectfully,
JOE W. SAVAGE,
Executive Secretary.

Announcements

The annual banquet of the association will be served Wednesday evening, June 22, at 7 o'clock in the main dining room. There will be a cover charge of $2.00 per plate and tickets are to be obtained at the cashier's window.

The annual convention golf tournament will be conducted on Monday, June 20, and entries must be in the hands of the executive secretary not later than 10 o'clock a. m. on that day. All golfers are urged to participate and to make this the best association tournament ever held. The hotel management and staff are cooperating. Get in touch with the golf committee headed by Dr. R. H. Dunn of South Charleston. A fee of $1.50 per day will be charged to golfers for use of the course.

All papers by members of the state association will be limited to 20 minutes and discussions to five minutes. This rule will be strictly enforced by the presiding officer.

The use of four or five tennis courts have been provided for members of the association and their families.

Arrangements for plunges in the hotel's magnificent swimming pool may be made at the bath department. Bring your bathing suit.

The secretaries of component societies will eat their noonday meal at 12 o'clock Tuesday, June 21, in one of the small dining rooms of the hotel. Each secretary will be expected to report the activities of his society and to make suggestions for improvement of all societies at this conference. The election of officers of the secretaries association for the ensuing year will be held at this meeting.

The convention dance will be given in the main ball room of the Greenbrier on Wednesday evening immediately after the banquet. All guests of the hotel are cordially invited to attend this dance.

Please register as soon as you arrive. The members of the ladies' auxiliary and all doctors' wives are also urgently requested to register.

Reservations may be made through Mr. Harry Tait manager of the Greenbrier Hotel, White Sulphur Springs, W. Va.

The following rates, which include all

meals except the convention banquet on Wednesday evening, have been made by the Greenbrier Hotel management at White Sulphur:

Single room without bath, (obliged to use public bath) $8.00 per day.

Combination double and single rooms with connecting bath, $9.00 per day.

Two single rooms with connecting bath, $10.00 per day.

Single room with private bath, $13.00 per day.

Additional cost for children when occupying the adults' room, including meals, $4.00 per day.

The above rates have been granted special to the members of the state association and are less than the regular convention rates of the Greenbrier.

Order of Business

For sessions of Council and House of Delegates:

Call to order by the President or Council Chairman respectively.

Receiving credentials.

Report of Committee on Scientific Work.

Report of Committee on Publication.

Report of Committee on Public Policy and Legislation.

Report of Secretary.

Report of Treasurer (Doctors Ray and Dunn as special committee to handle association finances for unexpired term of Dr. H. G. Nicholson).

Report of Council.

Report of Auditing Committee.

New Business.

Election of officers, Thursday afternoon, June 23, at 1:30 o'clock.

Next place of meeting.

Unfinished business.

Our Exhibitors

The West Virginia State Medical Association is indeed fortunate in having this year such a splendid representation of commercial exhibits. Practically every manufacturing line of interest to the medical profession will be displayed in the beautiful Spring Room of the Greenbrier by the biggest and best corporations in America. All members of the association and all visitors to the convention are urged to visit these exhibits and to see the excellent products on display.

The list of exhibitors follows:

Cameron's Surgical Specialty Company of Chicago.

Columbus Pharmacal Company of Columbus, O.

Deshell Laboratories of Chicago.

DuPuy Splint Company of Warsaw, Ind.

Feick Brothers of Pittsburgh, Pa.

Fulton, Robert A., Company of Pittsburgh, Pa.

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Mead-Johnson of Evansville, Ind.

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E. R. Squibb and Co. of New York City.

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Fifth District—Lincoln, Logan, McDowell, Mercer, Mingo, Monroe, Summers, Wayne and Wyoming counties; one year term, Harry G. Steele of Bluefield; two year term, J. Howard Anderson of Marytown.

Sixth District—Boone, Fayette, Greenbrier, Kanawha, Pocahontas and Raleigh counties; one year term, C. A. Ray, Charleston; two year term, R. H. Dunn of South Charleston.

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Public Policy and Legislative Committee —R. A. Ireland, Charleston, chairman; G. A. McQueen, Keysor; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg; D. A. MacGregor, Wheeling.

Committee on Medical Education—W. T. Henshaw, Charleston, chairman; John N. Simpson, Morgantown; W. S. Fulton, Wheeling.

Committee on Professional Relations—John R. Shultz, Charleston, chairman (2-year term); H. R. Johnson, Fairmont (1-year term); A. G. Rutherford, Welch (3-year term); W. R. Goff, Parkersburg (4-year term); Hugh G. Nicholson, Charleston (5-year term).

Workman's Compensation Committee—V. T. Churchman, Sr., Charleston, chairman; W. A. McMillan and R. H. Walker, Charleston, members.

Surgical Section—D. M. Aikman, Wheeling, chairman; R. K. Buford, Charleston, secretary.

Eye, Ear, Nose and Throat Section—C. B. Wylie, Morgantown, chairman; G. K. Nutting, Hinton, secretary.

Hospital Association Officers — H. F. Spillers, president; Sister Xavier, Wheeling, first vice president; L. W. Lawson, Logan, second vice-president; R. A. Ireland, Charleston, treasurer; Miss Greta Payne, Charleston, executive secretary.

Woman's Auxiliary—Mrs. B. S. Preston, Charleston, president; Mrs. W. H. St. Clair, Bluefield, first vice-president; Mrs. J. P. Lilly, Morgantown, second vice-president; Mrs. C. M. Scott, Bluefield, secretary; Mrs. C. A. Ray, Charleston, treasurer.

Councillors—Mrs. C. G. Morgan, Moundsville, first district; Mrs. W. H. Powell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. W. C. Swann, Huntington, fourth district; Mrs. R. V. Shanklin, Gary, fifth district; Mrs. B. S. Preston, Charleston, sixth district.

Delegates to Woman's Auxiliary of A. M. A.—Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

Delegate to the American Medical Association—H. P. Linsz, Wheeling; alternate, R. A. Ashworth, Moundsville.

Members of the House of Delegates

The following members of the House of Delegates for the sixtieth annual meeting have had their credentials certified to the executive secretary as of May 15, 1927:

Barbour-Randolph-Tucker—Delegates, J. C. Irons, Dartmoor; B. I. Golden, Elkins; alternate, C. B. Williams, Philippi.

Brooke county — Delegate, J. Schulz, Wellsburg.

Cabell county—Delegates, C. G. Willis, J. C. Matthews, F. O. Marple, W. W. Strange, Oscar B. Biern; R. M. Sloan, G. D. Johnson, W. C. Swann, C. P. S. Ford, all of Huntington.

Central West Virginia—Delegates, D. G. Caudy, Tioga; Robert McClung, Richwood; S. S. Hall, Buckhannon; alternates, W. E. Echols, Richwood; L. O. Hill, Camden-on-Gauley; H. S. Brown, Sutton.

Doddridge county—Delegate, A. Poole, West Union.

Eastern Panhandle—Delegates, A. B. Eagle, Martinsburg; Clifford Sperow, Martinsburg.

Fayette county—Delegates, M. C. Borman, Montgomery; M. A. Moore, Kingston, and J. A. Smith, Montgomery.

Grant-Hardy-Hampshire-Mineral — Delegates, J. H. Wolverton, Piedmont; Vernon L. Dyer, Petersburg; alternate, R. W. Love, Moorefield.

Greenbrier Valley—Delegates, C. F. Mahood, Alderson; H. L. Goodman, Ronceverte.

Hancock county—Delegate, F. B. Harrington, Weirton.

Harrison county—Delegates, B. Steele Brake, A. T. Post J. F. Williams, Cecil O. Post, all of Clarksburg.

Kanawha county—Delegates, W. A. MacMillan, John Thames, Wm. A. Thornhill, G. H. Barksdale, J. R. Shultz, Hugh Robins, Ray Kessel.

Lewis county—Delegates Guy R. Post, E. T. W. Hall, Weston.

Logan county—Delegates, H. H. Farley, C. A. Davis, L. W. Lawson, all of Logan; alternate, W. S. Rowan, Logan.

Marion county—Delegates, C. J. Carter, W. F. Boyers E. P. Smith, J. M. Trach, all of Fairmont; alternates, J. A. Reidy, Monongah; L. D. Norris, Fairmont; L. N. Yost, Fairmont.

Marshall county—Delegates, D. Berman, O. F. Covert, W. P. Bonar, Moundsville; alternates, L. H. McCuskey, Moundsville; J. C. Peck, Moundsville.

McDowell County—Delegates, A. G. Rutherford, Welch; R. V. Shanklin, Gary; W. B. Stevens, Eckman; alternates, H. G. Camper, Welch; J. C. Killey, Vivian.

Mercer County—Delegates, H. G. Steele, Bluefield; W. H. Wallingford, Princeton; R. O. Rogers, Bluefield; alternates, John H. Bird, Rock; Carl Smith, Princeton; W. H. St. Clair, Bluefield; A. H. Hoge, Bluefield.

Mingo county—Delegate, Fred Ben Quincy, Williamson.

Monongalia County—Delegates, G. R. Mawell, J. P. Lilly, W. C. Moser; alternates, R. H. Edmondson, F. T. Scanlon, all of Morgantown.

Ohio county—Delegates, J. G. Thoner, E. L. Armbrecht, H. M. Hall R. U. Drinkard, W. T. McClure, Wheeling.

Academy of Medicine of Parkersburg—Delegates, R. H. Paden, W. R. Goff, C. L. Muhleman, T. L. Harris; alternates, E. S. Goff, E. C. Hartman, S. M. Prunty, all of Parkersburg.

Preston county—Delegates, L. H. Lewis, Kingwood; B. S. Rankin, Tunnelton; alternate, R. D. Harman, Kingwood.

Raleigh county—Delegates, Walter D. Simmons, Slab Fork; A. U. Tieche, Beckley; K. M. Jarrell, Beckley; alternates, J. E. McKenzie, Beckley; D. L. Hill, Wickham; E. H. Hedrick, Beckley.

Summers county—Delegate, R. G. Broaddus, Hinton.

Taylor county—Delegate, Paul F. Warden, Grafton.

Tyler-Wetzel county—Delegate, V. H. Dye, Sistersville.

The following members have been chosen to meet out-of-state guests:

Dr. J. E. Sweet, New York City, by Dr. Wm. R. Laird, Montgomery.

Dr. George W. Crile, Cleveland, O., by Dr. Chester R. Ogden, Clarksburg.

Dr. Wm. Neill, Jr., Baltimore Md., by Dr. H. G. Steele, Bluefield.

Dr. Sparrell S. Gale, Roanoke, Va., by Dr. J. Howard Anderson, Marytown.

Dr. J. Sidney Ritter, New York City, by Dr. J. Howard Anderson, Marytown.

Dr. W. S. Gardner, Baltimore, Md., by Dr. F. F. Holroyd, Glen Rogers.

Dr. Wm. A. Frontz, Baltimore, Md., by Dr. C. J. Reynolds, Bluefield.

Dr. Elmer Funk, Philadelphia, Pa., by Dr. E. P. Smith, Fairmont.

Dr. J. O. Polak, Brooklyn, N. Y., by Dr. Jas. R. Bloss, Huntington.

Dr. Curran Pope, Louisville, Ky., by Dr. C. M. Scott, Bluefield.

Dr. Virgil Simpson, Louisville, Ky., by Dr. Chester R. Ogden, Clarksburg.

Dr. Joseph Sailer, Philadelphia, Pa., by Dr. Chester R. Ogden, Clarksburg.

Dr. Sidney Miller, Baltimore Md., by Dr. Walter E. Vest, Huntington.

Dr. Tunstall Taylor, Baltimore, Md., by Dr. McRae Banks, Raleigh.

Dr. R. E. Monger, Columbus, O., by Dr. David Littlejohn, Charleston.

Dr. C. C. Meckling, Pittsburgh, Pa., by Dr. L. D. Howard, Fairmont.

Dr. A. C. Ivy, Chicago, Ill., by Dr. C. H. Keesor, Wheeling.

Dr. Thos. Parran, Jr. by Dr. David Littlejohn, Charleston.

Dr. Gabriel Tucker, Philadelphia, Pa., by Dr. Harry H. Haggart, Bluefield.

Dr. J. Shelton Horsley, Richmond, Va., by Dr. R. H. Dunn, South Charleston.

Dr. C. C. Coleman, Richmond, Va., by Dr. W. H. St. Clair, Bluefield.

Dr. J. K. Guthrie, Hagerstown, Md., by Dr. C. B. Wylie, Morgantown.

Dr. Waitman F. Zinn, Baltimore, Md., by Dr. C. H. Hawes Huntington.

Dr. E. G. Gill, Roanoke, Va., by Dr. Harry H. Haggart, Bluefield.

Dr. Luther C. Peter, Philadelphia, Pa., by Dr. V. T. Churchman, Jr., Charleston.

Dr. Edward B. Heckel, Pittsburgh, Pa., by Dr. A. L. Coyle, Wheeling.

Our Past Presidents

1867	W. J. Bates*
1868	John Frissell*
1869	H. W. Brock*
1870	J. W. Ramsey*
1871	W. J. Bland*
1872	J. M. Lazzell*
1873	R. H. Cummins*
1874	M. S. Hall*
1875	M. Campbell*
1876	A. R. Barbee*
1877	E. A. Hildreth, Sr.*
1878	J. W. McSherry
1879	W. H. Sharp*
1880	W. M. Dent*
1881	W. F. Van Kirk*
1882	J. E. Reeves*
1883	B. W. Allen*
1884	A. Gerstell*
1885	George Baird*
1886	T. A. Harris*
1887	S. L. Jepson*
1888	L. S. Brock*
1889	L. D. Wilson*
1890	S. H. Austin
1891	S. H. Brownfield*
1892	C. Shriver*
1893	D. P. Morgan*
1894	R. W. Hazlett*
1895	D. Mayer*
1896	J. A. Campbell*
1897	N. D. Baker*
1898	C. F. Ulrich*
1899	J. L. Dickey
1900	C. S. Hoffman*
1901	A. H. Thayer
1902	G. A. Aschman*
1903	H. B. Stout
1904	T. L. Barber*
1905	T. M. Hood
1906	S. S. Wade
1907	W. W. Golden
1908	F. Howell*
1909	V. T. Churchman
1910	T. W. Moore
1911	C. A. Wingerter
1912	C. O. Henry
1913	F. L. Hupp
1914	R. E. Venig*
1915	H. P. Linsz
1916	A. P. Butt
1917	J. E. Rader
1918	Sam Holroyd
1919	Robert J. Reed
1920	H. R. Johnson
1921	J. H. Anderson
1922	George A. MacQueen
1923	John N. Simpson
1924	R. A. Ashworth
1925	George D. Jeffers
1926	James R. Bloss
1927	C. R. Ogden

* Deceased.

···PROGRAM···

Sixtieth Annual Meeting

West Virginia State Medical Association

White Sulphur Springs, W. Va.

TUESDAY : WEDNESDAY : THURSDAY

June 21-23, 1927

II

TUESDAY MORNING, JUNE 21ST

GENERAL SESSION

9:00 Call to Order—

DR. CHESTER R. OGDEN, *President*, Huntington

9:05 Invocation—

THE REV. FRENCH THOMPSON, D. D.

President Greenbrier College for Women, Lewisburg

9:10 Address of Welcome—

DR. D. G. PRESTON

President Greenbrier Valley Medical Society, Lewisburg

9:15 Response—

DR. J. HOWARD ANDERSON, Marytown

9:20 Greetings from Neighboring Associations—

9:30 Introducing ex-Presidents—

DR. HENRI P. LINSZ, Wheeling, Presiding

10:00 Address—

DR. JABEZ N. JACKSON

President American Medical Association, Kansas City, Mo.

10:30 "The Responsibility of the Medical Profession in Public Health Organization"—

DR. JOHN E. MONGER

Health Commissioner for Ohio, Columbus, Ohio

11:00 "The Treatment of Peptic Ulcers"—

DR. J. SHELTON HORSLEY, Richmond, Va.

The theories of the causation of peptic ulcers and the recent advances in physiology of the stomach and intestines are briefly reviewed. The different types and locations of peptic ulcer are mentioned and the tendency of the gastric peptic ulcer to degenerate into cancer is noted. It is suggested that different types of peptic ulcer should be treated along different therapeutic lines and that when a surgical operation is necessary medical treatment should always be carried out afterwards, and frequently should precede surgery.

11:30 "Bronchoscopic and Esophagoscopic Cases of General Interest"—

DR. GABRIEL TUCKER, Philadelphia, Pa.

Lantern slides and moving picture demonstration of work at the Chevalier Jackson Bronchoscopic Clinics, Philadelphia, Pa.

II

TUESDAY AFTERNOON, JUNE 21ST

General Session Continued

2:00 "Roentgen Ray as an Aid in the Diagnosis of Surgical Conditions of the Upper Urinary Tract" (Lantern Slides)—

DR. WM. A. FRONTZ, Baltimore, Md.

The employment of the roentgen ray to differentiate diagnosis of surgical conditions of the kidney and ureter. Discussion of these conditions with demonstration by lantern slides.

"Renal Tuberculosis"—

DR. J. SYDNEY RITTER, New York City

Presenting the etiology, pathology and symptoms of renal tuberculosis. The diagnostic procedures used today plus a report on cases collected from the records of the New York Post-Graduate Hospital. The pre- and post-operative treatment of renal tuberculosis with a report of some cases treated medically.

Discussion: DR. RAY M. BOBBITT, Huntington
DR. O. D. BARKER, Parkersburg
DR. C. J. REYNOLDS, Bluefield

3:20 "Caudal Anesthesia"—

DR. T. JUDD McBEE, Morgantown

There is no sufficient reason for regional and particularly caudal anesthesia not being more generally used. In caudal anesthesia no preoperative preparation is necessary. Neither is any hospitalization required. Most patients can leave the hospital in one hour after the completion of treatment or operation. Those that do remain in the hospital are required to do so for operative results and not for sacral injection.

3:45 "The Management of Acute Abdominal Conditions"—

DR. GEORGE W. CRILE, Cleveland, Ohio

Discussion: DR. J. E. CANNADAY, Charleston
DR. C. M. SCOTT or DR. T. E. VASS, Bluefield
DR. H. L. GOODMAN, Ronceverte

4:15 "Carcinoma of the Stomach"—

DR. JOSEPH SAILER, Philadelphia, Pa.

This paper will take up, first, the diagnosis of carcinoma of the stomach; second, the incidence; third, some statistical considerations; fourth, the pathological changes; and, fifth, some considerations of the treatment.

Discussion: DR. LUTHER DAVIS, Fairmont
DR. GEORGE D. JEFFERS, Parkersburg
DR. C. A. WINGERTER, Wheeling

4:45 "Surgical Treatment of Infantile Paralysis" (Lantern Slides)—

DR. R. TUNSTALL TAYLOR, Baltimore, Md.

Preventive measures; treatment of (a) febrile stage, important bearing on prognosis: lumbar puncture, treatment of oedema of the cord, hexamethylenamine, convalescent serum, adrenalin, elimination. (b) Convalescent stage, prevention of strain and fatigue to paretic muscles; massage and electricity, muscle training and braces. (c) Chronic stage, recognized value of operative procedures on tendons, muscles, fascia, bones and joints. Transplants and osteoectomies. Need of hospitalization at earliest possible moment and constant oversight later. Discarding of braces.

Discussion: DR. ARTHUR S. JONES, Huntington

TUESDAY EVENING, JUNE 21ST

General Session Continued—Open to Public

8:00 Address by President—

DR. CHESTER R. OGDEN, Clarksburg

Oration on Surgery—

DR. WADE H. ST. CLAIR, Bluefield

Oration on Medicine—

DR. VIRGIL E. SIMPSON, Louisville, Ky.

WEDNESDAY MORNING, JUNE 22ND

SECTION ON INTERNAL MEDICINE

(Main Ball Room)

8:00 "Fever, Its Production and Regulation"—

DR. L. J. BERNSTEIN, Wellsburg

A review of some of the literature on the subject of fever with an attempt to clarify the question of its ultimate mode of production and regulation.

8:20 "Health of School Children"—

DR. O. L. PERRY, Elkins

8:40 "Birth Injuries and Allied Conditions" (Lantern Slides)—

DR. ARTHUR A. SHAWKEY, Charleston

There are many physical and mental cripples among infants and children. Some of these are due to traumatic birth hemorrhage, some to hemorrhagic disease of the new born, some to congenital syphilis, and some apparently to congenital endocrine hypofunction or dysfunction. Certain symptoms are common to all. All respond favorably to pluriglandular treatment.

9:00 "The Purulent Meningitis Occurring in Young Children"—

DR. GEORGE M. LYON, Huntington

A resume of the forms of meningitis in which the cerebro-spinal fluid is purulent as it is seen in infants and small children. The discussion of diagnosis, treatment and prognosis of these forms and a detailed discussion of the treatment of meningococcus meningitis in infancy.

Discussion: DR. ROBERT HOOD, Clarksburg
DR. RAYMOND SLOAN, Huntington

9:20 "Our Duty to Diabetic Patients"—

DR. S. L. CHERRY, Clarksburg

Routine urinalysis should be done on all patients since the earlier the diagnosis is made the higher the tolerance is apt to be. Most cases can be treated by diet alone and in these the tolerance often increases. Success can only be hoped for when the patient is taught the principles of treatment and how to apply them in his own case. Our duty to the adult diabetic is to enable him to keep at work and it is beginning to appear that we can assure the diabetic child approximately normal growth and development.

9:40 "An Unsolved Problem"—

DR. C. H. MAXWELL, Morgantown

Cancer in this paper is made to include Sarcoma as well as Carcinoma. Heredity, trauma, methods of treatment, and expected developments are touched upon. But the whole object of the paper is an earnest plea for a constant lookout for the very earliest development of conditions that may lead to cancerous conditions later, and urge immediate steps to prevent the development of malignancy.

10:00 "Experiments on the Sino-Auricular Node"—

DR. MILTON C. BORMAN, Montgomery

The anatomical and physiological effects of ligation, excision and radium emanation upon the sino-auricular node, the initiatory mechanism of the cardiac impulse, together with anatomical studies of the human node, will be presented by discussion and lantern slides. This will be a paper dealing with pioneer intrathoracic surgery, and that vital physiological phenomenon, the cardiac impulse, upon which life, itself, depends.

Discussion: DR. WALTER E. VEST, Huntington.

10:20 "Pernicious Anemia"—

DR. D. A. MACGREGOR, Wheeling

Essential points for diagnosis. Review of older methods of treatment. Recent developments in dietetic treatment. Results obtained from high protein diet. Conclusions.

Discussion: DR. G. H. BARKSDALE, Charleston.

10:40 "Some Late Clinical Manifestations in 626 Obstetric Cases"—
DR. M. A. MOORE, Kingston

Obstetrics in the hospital and that of a busy general practitioner in the home. Potter's technique of version, indications and contra-indications. Use of pituitary extract, product, dose, indications, and contra-indications. Should the general practitioner try to conserve time on obstetrical cases? Technique of examination. What is the best method of pelvimetry? What is the value of psychology in the obstetrical room?

11:00 "Hydatidiform Pregnancy with Report of Two Cases"—
DR. L. D. HOWARD, Fairmont

11:20 "My Special Method for Treating Neural Syphilis"—
DR. CURRAN POPE, Louisville, Ky.

II

WEDNESDAY MORNING, JUNE 22ND

SURGICAL SECTION

(Tudor Room)

8:30 "Acute Abdominal Emergencies"—
DR. A. G. RUTHERFORD, Welch

Discussion: DR. EDWIN F. SHEPPARD, Fairmont

9:00 "Living Suture Repair of Hernia with End Results"—
DR. E. BENNETTE HENSON, Charleston

9:30 "Bonegraft Surgery"—
DR. J. O. RANKIN, Wheeling

10:00 "The Treatment of Brain Abscess" (Lantern Slides)—
DR. C. C. COLEMAN, Richmond, Va.

10:30 "Observations of the Gallbladder Problem"—
DR. W. S. FULTON, Wheeling

Discussion: DR. W. H. WALLINGFORD, Princeton

11:00 "Some of the Calamities That May Follow Attempts at the Interruption of Pregnancy"—
DR. JOHN E. CANNADAY, Charleston

11:30 "Review of Literature of Empyema of the Pericardium, with Case Report"—
DR. J. A. GUTHRIE, Huntington

12:00 "Technic of Uterine Suspension"—
DR. C. F. FISHER, Richwood

WEDNESDAY MORNING, JUNE 22ND

EYE, EAR, NOSE AND THROAT SECTION

(Card Room)

8:30 "Latest Tear Duct Operation"—

DR. A. L. COYLE, Wheeling

"When to Operate"—

DR. J. K. GUTHRIE, Hagerstown, Md.

"The Oral Cavity as a Part of Our Specialty"—

DR. C. B. ROHR, Alum Bridge

"Buphthalmus with 20/20 Vision"—

DR. V. T. CHURCHMAN, JR., Charleston

"Lens Extraction"—

DR. C. H. HAWES, Huntington

"Facial Types and Facial Asymmetry"—

DR. H. V. KING, Morgantown

"Tonsilloliths"—

DR. E. C. HARTMAN, Parkersburg

"Keratitis"—

DR. I. D. COLE, Clarksburg

"Malignant Growths of the Eyeball"—

DR. H. H. VEON, Parkersburg

"Bronchoscopy and Esophagoscopy in Relation to General Practice"—

DR. WAITMAN F. ZINN, Baltimore, Md.

I. Introduction. A brief history of endoscopy.

II. Cases met with in general practice that should have the benefit of an endoscopy.

III. When should a bronchoscopy be done?

IV. What may be accomplished by treatment of such cases as lung abscess, bronchial asthma, growths of the bronchi and larynx, and benign lesions of the esophagus?

V. Demonstration of cases by means of lantern slides.

"Bronchoscopy" (Lantern Slides)

DR. E. G. GILL, Roanoke, Va.

Acquiring skill; team work; diagnostic value; mechanical and therapeutic value; aid in performing tracheotomy; illustrated case reports.

"Bronchoscopy and Esophagoscopy" (Lantern Slides)

DR. HARRY H. HAGGART, Bluefield

"Observations of the Early Recognition and General Management of Glaucoma"—

DR. LUTHER C. PETER, Philadelphia, Pa.

The frequency of glaucoma in private and in hospital practice. In the author's experience, about six percent of private patients suffer from glaucoma. Hospital records show a somewhat lower rate.

Three important basic facts in glaucoma are: first, blindness is inevitable if the patient is untreated; second, early diagnosis is imperative in order to arrest the progress of the disease; and third, although glaucoma has a medical phase, in the light of our present knowledge, the disease is essentially a surgical one, and must be met by surgical measures.

"The Cornea"—

DR. EDWARD B. HECKEL, Pittsburgh, Pa.

The cornea, its structure and shape; injuries and inflammatory conditions.

"Vitreous Opacities"—

DR. E. R. McINTOSH, Elkins

"The Development of Exophoria in Goiter"—

DR. A. F. COMPTON, Moundsville

II

WEDNESDAY AFTERNOON, JUNE 22ND

General Session Continued

2:00 "Acute Transverse Myelitis"—

DR. WALTER E. VEST, Huntington

Definition. Theories of etiology. Pathology. Symptomatology. Physical findings. Diagnosis. Treatment. Case report.

Discussion: Dr. SIDNEY MILLER, Baltimore, Md.

2:30 "The Formation of Gallstones"—

DR. J. E. SWEET, New York City

A lantern slide demonstration of the anatomical structure of the gall bladder and the cystic duct, and of the apparent relationship between this structure and the formation of certain types of gall stones.

The probable function of the gall bladder and the relationship of a disturbance of this function to the formation of certain other types of gall stones.

The relationship of structure and functions to diagnosis and operative procedure.

3:00 "Post Obstetrical Infections"—

DR. J. ROSS HUNTER, Charleston

Discussion: DR. W. W. POINT, Charleston

3:30 Address—

DR. A. C. IVY, Chicago, Illinois

Our recent observations on the physiology of gastric and pancreatic secretions will be reviewed and the new methods developed for the study of gastric and pancreatic secretion will be outlined. These recent observations made possible by the new methods, have made it possible to make a simple and clear outline of the factors concerned in stimulating the gastric glands and the pancreas. Evidence will be presented showing that a humoral mechanism is concerned in gastric secretion, and that a hormone mechanism is concerned in pancreatic secretion. The mechanism of fat and bile stimulation of the pancreas will be discussed. The most recent observations on gastro-intestinal motility and absorption will be outlined briefly.

4:00 "A Discussion of Fibroid Tumors and Their Treatment from a Modern Viewpoint"—

DR. WILLIAM NEILL, JR., Baltimore, Md.

General consideration of fibroid tumors. Classification of the tumors into three groups with discussion of treatment of each—whether to let alone and observe, radiate or operate. Technique of treatments. Conclusions.

4:30 "Foreign Bodies in the Stomach"—

DR. F. V. LANGFITT, Clarksburg

Abstract of the literature of foreign bodies of all description consisting of metal, glass, cloth, rubber, food, shellac, and hair. Foreign bodies removed successfully as early as 1635 by gastrotomy. Up to 1924 about ninety cases reported for which gastrotomy was performed. Report of a case of Trichobezoar or hair-cast.

Discussion: DR. CHESNEY M. RAMAGE, Fairmont

WEDNESDAY, EVENING, JUNE 22ND

ANNUAL BANQUET

In main dining room at 7:00 o'clock

Cover charge $2:00 per plate Tickets obtained at cashier's window

General Arrangements Committee in charge

THURSDAY MORNING, JUNE 23RD

General Session Continued

8:30 "The Relation of Health to the Rural Communities"—

DR. THOMAS PARRAN, JR.

Assistant Surgeon General, U. S. Public Health Service

9:00 "The Surgical Treatment of Pulmonary Tuberculosis"—

DR. SPARRELL S. GALE, Roanoke, Va.

The type of case in which surgical treatment is indicated unilateral tuberculosis with little or no involvement of opposite lung. Cases in which artificial pneumothorax has failed due to dense adhesions or other causes that keep lung from collapsing, these patients should be handled with tuberculosis specialists, roentgenologist and surgeon, and gotten in the best physical condition possible before operation. In most cases a preliminary phrenicotomy should be done. It is an index to patient's surgical resistance; besides, it reduces the lung volume one-sixth to one-third. Has therapeutic value. Rib resection should be done in practically two stages.

9:30 "The Importance of an Early Diagnosis of Foreign Bodies in the Air and Food Passages"—

DR. ARTHUR HOGE, Wheeling

Early diagnosis of foreign bodies tends to simplify the problem of removal and lessens danger of irritation from the intruder itself. Failure of taking into consideration the possibility of foreign body results in many deaths.

Blind passage of stomach tube is a dangerous procedure. When a healthy child who is normally playing suddenly chokes with or without cyanosis the possibility of foreign body must be considered. A careful examination should be made. If symptoms or signs are noted a direct examination should be done. In competent hands a bronchoscopic or esophagoscopic examination is practically without danger.

10:00 "The Diagnosis and Treatment of Coronary Thrombosis"—

DR. ELMER FUNK, Philadelphia, Pa.

The clinical significance of pain in cardiac disease. The pain in coronary artery disease. The typical picture of coronary thrombosis. The atypical clinical features which cause difficulties in diagnosis. The problems of differential diagnosis. The treatment of the underlying factors and of the attack. Results of therapy. Brief reference to illustrative cases.

10:30 "The Interpretation of the Ano-Rectal Complaint"—

DR. CURT MECKLING, Pittsburgh, Pa.

The interpretation of the symptoms of the common ano-rectal disorder depends on an intelligent understanding of the embryology, anatomy and physiology of this region. Pain, bleeding, protrusion and abscess are the common disorders. They produce local and systematic symptoms of wide-reaching significance. Accurate treatment depends on a definite diagnosis which is usually not made. Refuse to treat if examination is refused.

11:00 "The Treatment of Cancer of the Uterus"—

DR. WM. S. GARDNER, Baltimore, Md.

This paper states that the results of treatment depend more upon the pathological condition present than upon the particular kind of treatment used; that we should get away from the idea that all uterine cancers are equally malignant, and that the variations in malignancy are easily detectable.

11:30 "The Present Status of the Toxemias of Pregnancy, Their Diagnosis and Treatment"—

DR. JOHN OSBORN POLAK, Brooklyn, N. Y.

Discussion: DR JAMES R. BLOSS, Huntington

THURSDAY AFTERNOON, JUNE 23RD

1:30 Meeting of House of Delegates. Final business session.

(a) Election of officers.

(b) Next place of meeting selected.

(c) Unfinished business settled.

Respectfully submitted,
H. G. STEELE, Bluefield, *Chairman*,
CHARLES H. KEESOR, Wheeling
E. P. SMITH, Fairmont
J. W. SAVAGE, Charleston
ex-Officio Secretary

Third Annual Meeting

WOMAN'S AUXILIARY

MONDAY EVENING, JUNE 20TH

Registration—
MRS. WALTER C. SWANN, *Chairman*

EXECUTIVE MEETING

TUESDAY, JUNE 21ST

9:00 Call to Order

9:05 Invocation

9:10 Address of Welcome—
MRS. H. W. TAIT, White Sulphur Springs

9:15 Response—
MRS. W. B. SCHERR, Morgantown

9:20 Report of Secretary and Treasurer

9:25 Reports of Delegates
Mercer, McDowell, Cabell, Parkersburg, Kanawha, Monongalia and Raleigh Counties

10:00 Joint Meeting with the West Virginia State Medical Association

11:00 Greetings from the Virginia Auxiliary—
MRS. SOUTHGATE LEIGH, Norfolk, Va.

11:15 Address on the National Auxiliary
MRS. SEALE HARRIS, Birmingham, Alabama

11:45 Appointment of Committees

11:50 Announcements

AFTERNOON

3:00 Report of Chairman on Hygeia
MRS. H. D. PRICE, Parkersburg

3:15 Address by the President

4:00 Drive and Tea at Kate's Mountain

EVENING

8:00 Joint Meeting

II

WEDNESDAY, JUNE 22ND

MORNING

9:00 Business Session

9:30 Round Table—
MRS. R. V. SHANKLIN, Gary

10:00 Educational Program
MRS. JAMES R. BLOSS

AFTERNOON

1:00 Luncheon

Echoes from Washington

Reports from A. M. A. Delegates

4:00 Drive

EVENING

8:00 Banquet and Ball

II

THURSDAY, JUNE 23RD

MORNING

9:00 Unfinished Business

9:30 Report of Committees

10:00 Election of Officers

10:30 Adjournment

II

COMMITTEE ON ENTERTAINMENT

MISS SARAH MURRAY, R. N., *Chairman*

MRS. G. L. WYATTE

MRS. J. D. ARBUCKLE

MRS. H. L. GOODMAN

MRS. D. G. PRESTON

GENERAL NEWS NOTES

W. VA. IS REPRESENTED AT A. M. A. CONVENTION

The West Virginia State Medical Association was represented by approximately 100 members at the recent American Medical Association convention at Washington, D. C., on May 16-20 inclusive. There were 42 West Virginia members who registered on Monday, the first day of the sessions, and they continued to register until the last day of the convention.

Among the members who registered were Dr. Chester R. Ogden of Clarksburg, president of the state association; Dr. James R. Bloss of Huntington, past president, and a number of other state and component society officers. The complete registration follows:

Dr. George W. Abersold of Wheeling, Dr. E. Bennette Henson of Charleston, Dr. Harry Bowton, Jr., of Pierce, Dr. C. H. Clovis of Wheeling, Dr. Frank J. Collison of Bluefield, Dr. William Ralph Counts of Welch, Dr. Ira M. Fisher of Stotesbury, Dr. William L. Fitzbaugh of McComas, Dr. C. S. Fortney of Hundred, Dr. F. D. Fortney of Newburg, Dr. M. J. Fortney of Hundred, Dr. T. F. Garrett of Sprague, Dr. William H. Greene of Weston, Dr. A. H. Griggs of Beckley, Dr. B. F. Harden of Wellsburg, Dr. Arthur K. Hoge of Wheeling, Dr. Frank LeMoyne Hupp of Wheeling, Dr. G. G. Irwin of Charleston, Dr. K. M. Jarrell of Beckley, Dr. L. Rush Lambert of Coalwood, Dr. E. B. Martin of Romney, Dr. F. E. Martin of New Martinsville, Dr. Etta Mason of Hopemont, Dr. J. E. McKenzie of Beckley, Dr. H. N. Moser of Terra Alta, Dr. H. F. Nolte of Wheeling, Dr. Edward M. Phillips of Wheeling, Dr. H. C. Powell of Morgantown, Dr. Philip Ford Prioleau of Fairmont, Dr. James Putney of Charleston, Dr. J. E. Rader of Huntington, Dr. Lonzo O. Rose of Parkersburg.

Dr. Noah Rouse of Big Creek, Dr. W. F. Shirkey, Jr., of Charleston, Dr. William A. Thornhill of Charleston, Dr. A. V. Tieche of Beckley, Dr. J. M. Trach of Bairwood, Dr. Eldon B. Tucker of Morgantown, Dr. S. S. Wade of Morgantown, Dr. H. A. Walkup of Mt. Hope, Dr. Paul P. Warden of Grafton and Dr. J. J. Willingham of Hopemont.

Dr. D. M. Aikman of Wheeling, Dr. C. C. Ballard of Gap Mills, Dr. Ray Maxwell Bobbitt of Huntington, Dr. James T. Brennan of Clarksburg, Dr. Ben F. Brugh of Montgomery, Dr. S. H. Burton of Weston, Dr. G. E. Coon of Milton, Dr. Wayne H. Crum of Martinsburg, Dr. Mortimer D. Cure of Weston, Dr. J. W. DeVebre of Ronceverte, Dr. Robert W. Fisher of Morgantown, Dr. James P. Fitch of Morgantown, Dr. H. A. Giltner of Parkersburg, Dr. Benjamin I. Golden of Elkins, Dr. Sobisca S. Hall of Buckhannon, Dr. R. D. Harman of Kingwood, Dr. F. C. Hodges of Huntington, Dr. Fred F. Holroyd of Athens, Dr. Harold H. Howell of Madison, Dr. J. B. Lacy of Nathalie, Dr. Henri P. Linz of Wheeling, Dr. R. W. Love of Moorefield, Dr. C. H. Maxwell of Morgantown.

Dr. George Ralph Maxwell of Morgantown, Dr. Roy H. McClung of Alderson, Dr. W. A. McMillan of Charleston, Dr. Harold C. Miller of Eglon, Dr. Joseph L. Miller of Thomas, Dr. T. W. Moore of Huntington, Dr. W. C. Moser of Morgantown, Dr. J. P. McMullen of Wellsburg, Dr. L. W. Page of Buckhannon, Dr. D. C. Peck of Grafton, Dr. Howard T. Phillips of Wheeling, Dr. Samuel H. Phillips of Charleston, Dr. B. S. Preston of Charleston, Dr. Robert B. Price of Charleston, Dr. J. W. Rife of Kenova, Dr. Joseph U. Rohr of Charleston, Dr. Franklin T. Scanlon of Morgantown.

Dr. William B. Scherr of Morgantown, Dr. James S. Skaggs of Seth, Dr. G. A. Smith of Montgomery, Dr. Paul C. Starkey of Ravenswood, Dr. L. E. Steele of Logan, Dr. Benjamin M. Stout of Morgantown, Dr. Mark Sutphin of Logan, Dr. R. B. Talbott of Erivice, Dr. Wes C. Thomas of Huntington, Dr. R. J. Wilkinson of Huntington.

Dr. William P. Black of Charleston, Dr. C. F. Boyers of Morgantown, Dr. Harry M. Campbell of Parkersburg, Dr. L. M. Campbell of Eskdale, Dr. J. D. Cole of Clarksburg, Dr. Horace L. Goodman of Ronceverte, Dr. O. L. Hudkins of Weston, Dr. A. C. Lambert of Charleston, Dr. F. E. Martin of New Martinsville, Dr. Barrick S. Rankin of Tunnelton, Dr. A. A. Shawkey of Charleston, Dr. George Snyder of Weston, Dr. C. B. Williams of Philippi and Dr. Emery D. Wise of Rowlesburg.

SEN. NEELY PROPOSES CANCER CURE REWARD

Mansfield M. Neely of Fairmont, United States Senator for West Virginia, introduced a bill in the Senate February 4 (Senate Bill No. 5589) which would provide a federal reward of $5,000,000 to be paid for the discovery of a cure for cancer. This bill has attracted favorable comment in the press of the nation, for the most part. The consensus is that while the regard is high, yet such a discovery would prove a boon to mankind. The text of the bill follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby authorized to be appropriated (a) the sum of five million dollars ($5,000,000), to be paid as a reward to the first discoverer of a cure for cancer which shall have been approved by the commission hereinafter created. (b) The sum of $25,000 to cover the actual expenses of the members of the commission necessarily incurred in the performance of the duties hereinafter specified.

"Section 2. There is hereby created a commission to determine the success of any cure for cancer that may be submitted by the discoverer thereof to the commission. Such commission shall be composed of three eminent scientists appointed by the President and any vacancies occurring in the membership of the commission shall be filled in the manner in which original appointments to the commission are made. The commission shall elect a chairman from among its members. The members of the commission, including the chairman, shall serve without compensation, but shall be allowed their actual expenses necessarily incurred while engaged upon the business of the commission. Such expenses shall be paid upon presentation of proper vouchers therefor, signed by the chairman of the commission, to the Secretary of the Treasury.

"Section 3. The commission is authorized and directed to inquire into and determine the success of any cure for cancer submitted to it, but the United States shall pay no cost or expense on account of any such inquiry or determination, except as provided in Section 2 hereof. It shall be the duty of any department or branch of the Government, upon the request of the commission, approved by the President, to lend such assistance and cooperation to the commission as may be necessary in making such inquiry into or determination of the success of such cure.

"Section 4. The commission shall prepare and submit to Congress a report covering the first successful and practical cure for cancer discovered and shall thereupon cease to exist."

HUNTINGTON HAS TRI-STATE MEET

The fifth meeting of the Central Tri-State Medical Society was held with 361 members in attendance at the Hotel Prichard in Huntington on Thursday, April 28. The meeting was presided over by Dr. Charles E. Holzer, of Gallipolis, O., president of the society.

The afternoon session, which opened at 2 o'clock, was featured by a paper by Dr. Charles Gordon Heyd of New York City on "The Diagnosis of Abdominal Conditions and Surgical Pathology in the Upper Abdomen." Dr. Heyd's paper was accompanied by lantern slides and was discussed by Dr. Mont Reid of Cincinnati, O.

Dr. Walter E. Dandy of Baltimore, Md., gave another interesting paper during the afternoon session on "Diagnosis and Treatment of Brain Conditions." Lantern slides accompanying Dr. Dandy's paper were screened at the evening session. The discussion was carried on by Dr. Charles E. Locke of Cleveland, O.

Dr. Thomas R. Brown of Baltimore read

a paper on "The Treatment of Some of the Common Digestive Disorders" at the evening session which opened at 8:30 o'clock. His paper was discussed by Dr. John D. Dunham of Columbus, O.

The Tri-State banquet was held at 7 o'clock in the hotel ball room and was featured by a big-time vaudeville act from the Palace theatre, Huntington. John Henry of Huntington rendered a number of popular and Scotch songs and the Prichard hotel orchestra played throughout the meal. Announcements were made by the President, Dr. Holzer.

WELTON-MILLER

The engagement of Dr. William A. Welton of Terra Alta, president of the Preston County Medical Society, to Miss Eleanor Miller was announced at a reception at the home of Miss Miller's parents, Mr. and Mrs. Charles A. Miller at Terra Alta. The wedding will be an event of the present month.

Miss Miller is a graduate of West Virginia University and a member of the Kappa Kappa Gamma society. For some time she has been a teacher in the Fairmont high school. Dr. Welton is a member of a family prominent in the eastern section of West Virginia and is also a graduate of the state university.

TECHNICIANS NEEDED

The United States Civil Service commission has announced that hospitals of the U. S. Veterans' bureau and the U. S. Public Health service throughout the country are urgently in need of technicians and that applications for positions will be received until the close of business on June 30, 1927. These positions are as follows: Senior medical technician (bacteriology); medical technician (bacteriology); senior medical technician (roentgenology), and medical technician (roentgenology).

Applications will be rated currently as they are received and certification of eligibles will be made as the needs of the service require, it was stated. Competitors will not be required to report for examination, but will be rated on their education, training and experience.

LISTER'S CENTENARY BIRTHDAY

By ROBERT J. REED, M.D.
Wheeling, W. Va.

"WHAT LORD LISTER'S WORK HAS MEANT TO SURGERY"

(AN EDITORIAL)

An impossible task has been imposed. No man can compute the far reaching influence of Lister's achievement. All the statisticians of all the governments on earth cannot accurately list and estimate its beneficient effects upon the victims of surgical conditions. Antisepsis, asepsis,—surgical cleanliness,—is the foundation rock upon which modern surgery rests, and it was laid by the master hand of Lister. The principles wrought out by him through the inspiration of Pasteur, and enunicated more than half a century ago, have been universally accepted for now more than two-score years. His work has meant a revolution in surgical practice and is responsible for incomputable accomplishments. How impossible to number the lives which modern, Listerian surgery has saved, or to estimate the human suffering which it has alleviated or averted, or to calculate the time saved in the shortened periods of morbidity of surgical patients.

Only those whose memories carry them back to the pre-Listerian era are able to fully appreciate the astounding changes which have taken place in surgical practice as the result of aseptic methods. Although it was in the 60's when Lister began his studies of infection,—his first announcement to the medical world being in '67,—his theories and practices were not generally accepted, certainly not in America until well into the '80's. So there are those still living, who in their student and interne years recall the scenes and experiences of that barbarous pre-aseptis period.

Probably you will pardon a short ramble away from the subject proper. Bellevue Hospital, New York, a wonderful institution, was, in the early '80's, a veritable mecca for the medical students and phy-

sicians of America. The faculties of three great medical colleges, Physicians and Surgeons, the University of New York and the Bellevue Medical College utilized its vast clinical facilities in their teaching activities. The writer is more familiar with the names of the famous Professors in old Bellevue College. Janeway and the Flints, Sr. and Jr., internists of world-wide fame; Mott, Dennis, Bryant, Woods, exceptional surgeons and surgical authors; Sayre, the leading orthopedist of the country; Lusk of international reputation as an obstetrician and gynecologist; VanBuren and Keys, widely known urologists; William H. Welch, pathologist, illustrious even in that day,—and yet so far as the students in Bellevue were aware, this brilliant faculty knew not Joseph Lister,—as late as 1884. There was no evidence of any positive acceptance of his theories or any serious attempt to adopt them in practice.

In every medical center there is usually found one striking personality possessing certain outstanding, fascinating characteristics by which the crowd is drawn. A clinical professor of surgery was the particular star of old Bellevue. Professor James Woods, familarly and affectionately known as "Jimmie Woods." He performed every Saturday afternoon in the large amphitheatre in the great dome of the hospital, and it was always filled. As he entered from a wing in the rear, to the operating area amid great applause, he was followed by numerous satellities, an actual cavalcade, the chief of which was a Mr. Ford, mechanician extraordinary to the House of Tieman. It was Mr. Ford's prerogative to preside over the instruments and make sure that Jimmie was provided with perfect tools. These instruments were already in place on side tables when the performers entered. They rested in beautiful rosewood cases lined in velvet, until Jimmie should give the signal, when Mr. Ford in street attire and with unkempt hands would speedily produce the shining blades. Jimmie himself was always attired in full afternoon dress, which in that day was the Prince Albert coat with a skirt unusually long and very flowing. A red rose invariably decorated the lapel of his coat and a white bow tie completed his operating outfit. When the patient was brought into the amphitheatre already etherized and the Esmark in place, the sign given by Jimmie for beginning proceedings was the turning back of the sleeves of his Prince Albert. His favorite operation was amputation of the thigh and it was a dull Saturday if he did not have at least one victim. The moment the cuffs of the sleeves went back, the long steel blade came forth from the velvet lined box and the operation was on. One swift circular sweep and the skin flap was completed, the great knife going on, leaving the hand of the operator and striking the floor beyond with a bang,—no time to pass an instrument to an assistant. This touch of the dramatic always gave a thrill to the students' spines, which was most satisfying and enduring. The flap was quickly dissected back, the muscles severed, the bone sawed through, and the act was over in less than two minutes. There was no preparation of the field of operation. There was no suggestion of any sterilization in gowns or towels or instruments or in the attire of assistants. The wound was left open and packed with oakum saturated with Balsam of Peru. This was a specimen of the surgery of Bellevue Hospital in the year '84.

In West Penn Hospital, Pittsburgh, about this same time, there was a staff of eminent surgeons, but they had not as yet experienced a true vision of aseptic surgery. As a result the internes spent entire mornings daily, going through the wards, which were always filled with traumatic surgical cases, armed with large brass syringes and supplied with carbolic solution,—The Lister Treatment, if you please. A morning routine was to go from bed to bed, irrigating supurating stumps, and infected wounds of every description. The same syringe was used from patient to patient without any attempt at disinfection. It was in the winter of '85 before any serious attempt was made to introduce true Listerian antiseptics into that leading hospital of western Pennsylvania.

In the very initial effort, the writer was

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signally honored in being designated to supervise the workings of a half dozen steam atomizers which had been placed around the walls of a small private room. He was commanded to see that they constantly belched forth a rich carbolic spray, over patient and operator and assistants. The case was one of uncomplicated ovarian cyst, and its successful removal with uneventful convalescence with healing by first intention, was an event, historical in that institution. It was made the theme for a paper by Dr. James McCann, the operator. The members of the Allegheny County Medical Society listened with excited interest to the recital of this successful ovariotomy by the antiseptic technique of Lister without suppurative complication and with primary union of the operative incision. The paper was received with applause, still with much incredulity. And yet this date was seventeen years after the birth of antiseptic surgery.

My apologies for this personal reminiscence, but the testimony of an eye witness often has weight with court and jury. Possibly this bit of experience out of the transitional period of septic to antiseptic surgery may serve to impress younger physicians of the immeasurable debt humanity owes to the genius of Lister. It may also point a moral: how tragic the sin of slothfulness in the acceptance of proven scientific truth.

The first result of Lord Lister's work was in the field of traumatic surgery, transforming compound into virtually simple fractures. When we attempt to reflect upon the illimitable sweep of the prophylactic influence upon infection of asepsis and antisepsis, in bodily injuries, our very imaginations fail us. Yet still greater triumphs of his work are found in the new surgical fields which have been opened.

Modern surgery is, in large measure, the surgery of the cavities of the body. In the olden days, these were entered by the surgeon at the peril of his patients. Asepsis has lowered the barriers and now they are invaded with comparative safety. They have become the lying-in-departments for the birth of specialisms. There is an open door to the eye and to the ear, not dreamed of in the pre-aseptic years. The brain has become a safe and an alluring field; the heart and the lungs invite courageous spirits to correct their ills; the abdominal cavity is now so surgically attractive that its devotees "multiply exceedingly, that they cannot be numbered for multitude." The pelvis has proven an open and fascinating region, and brave hearts are tenting along the genito-urinary tract.

These specialisms, new-born since the rise of asepsis, begotten by the spirit and mind of Lister, are having the devotion and enthusiasm of a vast army of trained men. Being able to study the pathology of the organs of the cavities of the human body by direct vision, they are not satisfied with the marvelous surgical progress of the past, but stirred by the achievements and the spirit of the great path-finders of our profession, and inspired by the few men chiefly responsible for modern surgery, to Morton, Long, Simpson, Bell, co-discoverers of anesthesia, to Pasteur, first among scientists, and to the matchless surgical revolutionist of the 19th century, Sir Joseph Lister, they are "carrying on",—these men of special training,—that they may prove themselves worthy of the mantles of the fathers of modern surgery, greatest of whom is Lister.

MEDICAL ECONOMICS*

By B. M. STOUT, M. D.
Morgantown, W. Va.

ECONOMICS, in a broad sense, is the science which deals with man or societies of men in regard to means of gaining a living. My subject, "Medical Economics," I interpret, concerns the relations between the medical profession and the laity, in fact, it concerns all matters that affect the physical well being of man. It has to do with the carrying on of medical work without waste or unnecessary expense to the patient or the physician. It shall be my aim to treat the subject first, from the standpoint

* Read before the Monongalia County Medical Society at Morgantown, March 1, 1927.

of the physician and then from that of the public.

In order to study medical economics thoroughly from the physician's standpoint we must trace his economical growth from his high school graduation, for it is at this point that his goal is fixed and his path diverges from that of his classmates. Now at graduation the average earning capacity is $150 per month which means that without any increase in his salary for seven years (which is highly improbable) his earnings would total $12,600. The medical student during these seven years of preparation has not only lost this, but he has had the additional expense of tuition, books and transportation which will amount to at least $500 a year or $3,500 for seven years. Besides this statistics show that each man who is graduated from a medical school has done so at a cost of $10,000 to that school. This sum added to his earning capacity and his additional expense while at school totals $26,100 which represents the output for a medical diploma. Now with an investment of this amount in oneself a physician owes it to himself, his family, his school, and his profession to make a close study of the economical phases of his profession. Here we have an investment which at 6 per cent is costing the young doctor $1,566 a year. Besides he has chosen a life's work which demands a maximum of charity work and which involves a tremendous overhead expense. Where are to be found business or professional men who render anything like the gratuitous services given by medical men? And although we know men are buying automobiles and other luxuries while their doctor bills remain unpaid, what are we to do about it? Are we to go ahead making calls which cost us $5 at a fee of $2 or free of charge and let these patients drive around town in a better car than we can afford? This is not charity, it is poor business and is not economy in any sense of the word.

A very conservative estimate of the overhead expense of a doctor including office rent, office girl, telephone, drugs and transportation is $250 a month. This is a small part of the physician's actual expense. The maintenance of a home which is in keeping with his position in the community and the cost of special conveniences and comforts which are almost necessary for a man who works such long and irregular hours amounts to a sum far in excess of the expenses of the average home. Then a doctor is considered a rich and prosperous man and is called upon to contribute heavily to charities in spite of the fact he is contributing free services every day.

It has been estimated that the physician at $3 a call cannot possibly earn over $30 a day, provided he has the calls, and gets the pay for them, and he doesn't. If you deduct from this the expense of the day you will find that the general practitioner cannot average over $15 a day out of which must still come the living expenses.

It is only fair and just and practical that patients should pay similar fees for similar services. But just because the physician feels that a certain patient is not able to pay a suitable fee is no reason why he should not give the highest class of service. This is where our profession surpasses all others; we medical men by pooling our interests and pulling together can serve humanity by protecting and prolonging life as no other group of men can do. But, the price must be paid and the laymen must pay their share. In my experience I have found that the majority expect to pay and are willing to pay adequate fees. And of course they expect the best of service and it is up to us to hold up the standards and never let ourselves drop into careless habits of superficially examining and treating a patient. The consequences may be very serious indeed. At all times we must strive to uphold the standard of economics. Mr. Hoover spoke in terms of material economics and the whole country listened and acted. Now why can't we men get together and concern ourselves with positive health rather than with handicaps and corrections? Preventive medicine is the big thing to be worked for and it is most economical from the standpoint of both patient and physician.

Let us cite a few concrete examples of economics in practice. It has come to be

recognized that prenatal care of pregnant woman is highly economical. By thorough examination including urinalysis, the taking of blood pressure, instructions about diet, exercise, clothing and by the careful conduct of labor we can practically insure safe delivery for mother and child and a delivery which will be followed by quick convalescence and normal health. It has come to be recognized, thank goodness, that the use of sterile gauze and sterile gloves, lysol, etc., is absolutely necessary to insure a safe delivery and that a man who does not use them is a menace to medical economics. A woman who, with even a slight infection, is confined to her bed an extra day or two has been cheated, and the economical scheme has been upset by carelessness. A little slip may cost a family a life as well as a sum in dollars and cents. For instance a woman who employs a doctor who will deliver her for $20 and he, because financially he cannot afford to give the time, does the work in an unsterile and slipshod way causing an infection which necessitates a housekeeper or nurse for a few extra days has been the loser not only in dollars and cents but probably her health is permanently impaired and that is the thing we cannot place an estimate upon. Doctors, it is for us to get together and work for more unified economical standards. It is always economical to do the best work.

Consultations in medicine are to be highly recommended as economical. It is not a stamp of ignorance to call on a fellow practitioner, it is rather a means of precaution. If you are unable to diagnose a case, then a consultant should be called at once. It is uneconomical to try to treat you know not what. An incorrect diagnosis or lack of diagnosis may result in a serious illness, which will cost your patient money, suffering and maybe life and will cost you the confidence of at least one family, perhaps a whole neighborhood.

We, as medical men, are looked upon as educated, altruistic, progressive citizens whose special mission is to protect the health and thereby the efficiency of the community. How many of us are keeping before us the high standard of duty which is the ethical ideal of our profession. Is it ethical or economical for us to casually ply our daily tasks of visiting patients with preventable diseases without taking some drastic step to teach people the economy of preventive medicine?

The time has come for organizing a drive against diphtheria, smallpox and typhoid in our own community and yet we don't do it (Examples). As long as we meet here and read papers and talk and do not act, no real benefit or, but very little, can come from our society.

Another phase of medical economics is sponsored by insurance companies but not advocated by physicians as an organized group; this is a physical examination at least twice a year. It is highly economical. A fraction of time and money that is now spent on personal adornment at the beauty shops, and on cosmetics, if spent on an hour's examination twice a year, would bring great returns in happiness. It is up to us to encourage people to see us when they are well. A few great and busy men have adopted the plan of paying a doctor a set sum to keep them well. Isn't this an improvement over the old "cure" method and much more economical from the standpoint of both physician and patient? (Example: Even the Chinese pay when well.) It is deplorable the way children are neglected until often a permanent handicap is present before it is discovered. By regular thorough physical examination thousands of children could be saved suffering and poor health. Luther Burbank said that if we gave plants no more attention than we give little children we would now be living in a jungle of weeds.

Another economical measure which should be advocated by us is the use of the hospital. How many of us insist upon having our car repaired upon the street or in our own garage? We want it to go to the shop where the best tools and most efficient labor can be used. We consider this economical. We all know that for the most part it is economical to treat sick people in the hospital where there are facilities for good workmanship. Of course, in case of slight illness, this measure is not necessary. By

spending a few minutes with pencil and pad we can show a patient the wisdom and economy of hospital treatment. Often a patient with diseased tonsils who averages three or four attacks of tonsilitis a year wanders into your office and when advised to have an operation pleads that he can't afford loss of time and money. A little arithmetic will show him that the only economical thing to do, the only thing he can afford to do, is to have them out; and then maybe, he reads a chiropractor's "ad" and pays him $2 per week as long as he is able to get to his office.

Now we have mentioned some of the ups and downs in the realm of medical economics. It is our business to study our patients and their circumstances and do all we can to improve the situation. There are three classes of patients with which we have to deal.

Under the first class is the patient who has his regular physician and sticks by him and follows his advice and orders. In the second class, is the fellow who shifts about from doctor to doctor getting advice and the diagnosis of his condition the while following no one's advice and most likely paying no one. Belonging to the third class is the patient who follows the advice of the physician as long as he is willing to give his advice free but when asked to pay for services, leaves him and goes to another, in this way evading paying for any service. The most of the bad accounts which we have upon our books are not of people who cannot afford to pay but are of the class who are enjoying better clothes, more leisure time, and more luxuries than we are.

The real charity patient is rare; there are, to be sure, a great number of patients who, when overtaken by a severe illness will be unable to pay at that time an adequate fee for services. It will be found however that he, or some member of his family, will be willing to sign some form of obligation which will enable us to collect at a future time for these services. One method, which I have found to work out very well, if the man hasn't regular employment and if he or his relatives have real estate, is to have him sign a promissory note made payable to the bank where the physician does his banking. I have found the bank willing to accept this note when endorsed by the physician, collect the interest, and take payments upon the note. Another method of collection is to obtain a written order to the firm, city, state or company for the amount of the services. It will be gladly handled for five or ten per cent for the trouble to the one who takes care of this collection. I am sure that we will find all the coal companies, factories, etc., ready to assist us in this matter. In fact most companies insist upon their employees keeping their bills paid. This must be done at the time services are contracted for or rendered. A third method of collection has been discussed by a number of the members of our society. This method is to employ a secretary who will handle the delinquent list of each member of the association and furnish a copy to each member who can consult it to see the status of a new patient before answering a call. Charity patients would be designated by each doctor as would those who simply float about paying no one. Another suggestion along this line is to co-operate with the credit association and let them handle our accounts.

DIPHTHERIA COSTLY FOR WEST VIRGINIANS

Conservative figures place the cost of diphtheria to the state of West Virginia for the year 1926 at $1,845,760. This estimate, according to Dr. David Littlejohn of the State Health Department, is based on the following figures: $150 for medical and nursing care for each of the 1289 cases reported to the state; $200 for each of the 162 funerals of those dying from the disease; and $10,000 the price of each human life sacrificed.

"As diphtheria is now recognized as one of the preventable diseases, there is positively no excuse except ignorance, neglect or indifference for such a record," said Dr. W. T. Henshaw, state health commissioner. "Parents should see that their children are protected before entering school as that is the most dangerous age for those contracting the disease."

The death rate from diphtheria for the

state last year was 12.5 per cent for every 100 cases, or a total of 162 deaths, according to reports received by the State Health Department. Of this number 64 per cent, or 104 deaths, occurred among children under five years of age and 17 per cent, or 27 deaths among children from five to nine years of age.

To combat this waste of child life the State Health Department is waging a campaign for the immunization of all children of school and pre-school age. The parent-teacher associations are cooperating in this program by inaugurating pre-school clinics throughout the state as a part of the National Child Health day program and are urging all parents to protect their children by giving them toxin anti-toxin which will give immunity for life against diphtheria.

Those counties in the state having full-time health units have made a great advance in this work, reducing the prevalence of disease by immunizing hundreds of school children against diphtheria, smallpox and typhoid fever. In Ohio county, Dr. W. H. McLain, director of the full-time health unit, has immunized over 11,000 children against diphtheria without a single bad result, since October, 1926.

Many of the larger cities, including New York and Washington, are devoting not one day as National Health day, but this week, to waging an active campaign against diphtheria.

CORRESPONDENCE NURSING

In spite of the fact that a well trained nurse has had, besides some high school education, at least three years' instruction in a good hospital, including lectures, laboratory work and practical experience in diet kitchens, operating and delivery rooms and at the bedside, there are at least eight schools that offer to teach the nursing art by correspondence, asserts *Hygeia.*

Position in the nursing profession today depends on recognition by the state, and correspondence school graduates are not given such recognition. Their lessons and diploma are not worth the paper on which they are printed. The girl who wants to be a nurse should consult her family physician as to the selection of a proper school. If he has not the requisite information he can get it by writing to the headquarters of the American Medical Association.

ASK ME ANOTHER

With the cross word puzzle craze giving way before the avalanche of question and answer books, the publicity bureau of the Indiana State Medical Association has recently issued a series of ten questions of particular interest to the medical profession. According to the bulletin, every well informed man, woman and child should be able to answer the questions, which follow:

1. Who is called the father of scientific medicine?
2. Who invented the X-ray?
3. What great French physician discovered that germs cause disease?
4. What relation has scientific medicine to present living conditions in Panama?
5. Who discovered the germ of tuberculosis, diphtheria, scarlet fever?
6. What is the best way to guard against disease?
7. Where and when was the first hospital established?
8. Why must one be educated in the basic sciences before he can practice the healing art?
9. Who first used antiseptic methods in surgery?
10. What three diseases are preventable by immunization?

TYPHOID CONTROL

For the first time in fifteen years that the records of typhoid fever control in the large cities of the United States have been published, four cities went through the year without a death from this disease and in more than a dozen others the rates were under 1.0 per hundred thousand population, states *Hygeia.* The number of cases was probably 50,000 less in 1926 than it would have been if the conditions of 1910 had continued to prevail.

The West Virginia Medical Journal

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C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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THE PRESIDENT'S ADDRESS *

By CHESTER R. OGDEN, M. D.
Clarksburg, W. Va.

FELLOWS of the West Virginia State Medical Association, Honorable Guests, Ladies and Gentlemen:

We have reached another important milestone in the development of medicine in West Virginia.

Before proceeding to an appointed task, just as far as human frailties, an emotional nature, and, an overflowing heart will allow, permit me to again thank the members of the association for this great honor.

The sixty years that have intervened between this and the day when those few men who had climbed far enough up the heights to view the sea and to get a vision of the future, met at Fairmont and gave life to this organization, have been years of continuous progress in medicine and surgery in West Virginia. It would seem, indeed, that no more fitting place could have been chosen in which to celebrate so important birthday of our association, than this beauty spot among the hills—a place so full of legend and traditions of the past, so inspiring in the present and so signal of promised joys for the future generations.

You remember, Dante, in his Ascent of the Mount, said: "All men are delighted to look back."

While there is, for our profession, much in retrospect to give comfort and cheer, yet what really concerns us, are the problems now upon us and just ahead of us.

Ours is the task to meet and to do the work now falling to our hands, and, in addition thereto, endeavor to anticipate some of the prospects in the future.

If the question were asked, how can public regard and appreciation of the art and science of medicine be increased, the answer would be education—education of the doctor and the public—and the means to this end are steadily at work.

The young men now entering the practice of medicine represent a degree of culture which is giving our profession the flower of our young manhood; and the preparation

* Delivered at the Sixtieth Annual Meeting of the West Virginia State Medical Association, at White Sulphur Springs on June 21, 1927.

necessary in most institutions for the training of medical men, and the requirements imposed in most states for a license to practice, are all contributing to place the medical profession of the future upon a much higher plane than ever before.

The next of importance, is an organized profession, unified and united. That means laboring together in harmony, each giving to the others whatever advantage he may have to contribute; and in the most pleasant and friendly way, vying with one another to see who can give the most.

CHESTER R. OGDEN
President, 1927

Every community should have a medical society or a medical organization for the interchange of ideas and reporting of cases and experiences. It is indeed surprising how a few high class, energetic and devoted men in a locality, doing good work, act as an inspiration to the rest of the profession and improve the habits and the practices of their colleagues. The coming together or the associating together of a group of men doing admirable work, will cause to be sent abroad their influence, giving a higher tone to their local profession.

Medical groupings and medical societies help toward perfecting medical organization.

A great national society, such as we have in the American Medical Association, can do much for the advancement of medicine in the nation. Aside from its functions as a society, with its meetings and discussions, it encourages the scientific spirit. It has done much in advancing the standards of medicine and is steadily increasing in influence and usefulness. It has rendered great and valuable service to the public in exposing all kinds of frauds in proprietary medicines and is conducting a propaganda against vice and other products of public ignorance. It stands for high ideals. It, therefore, behooves the profession of West Virginia, to take pride in this great organization, and assist in making it as perfect as possible and a fitting representative of the most noble ideals and traditions in medicine. Such an organization serves the best ends of the profession.

It cultivates a professional uniformity and unity, brings the most remote and humble doctor into closer touch and personal contact with his most learned, advanced and successful colleague. But, above all, the most important work within the reach of such a great organization, is that which is directly in line with the great aims of the profession — the advancement of medical knowledge and the awakening in the public mind and appreciation of the functions, the aims and possibilities in medicine. How is the profession of medicine in West Virginia to help in this great campaign of education? First, by a greater number and better organized county societies. A medical community with a medical society is invariably progressive. Some one has said, that a good county medical society is influenced by "the indescribable spirit of the Hive" in which all members have a right and which depends for its existence upon the interests of all, when once established and appreciated, becomes the center of common sympathy and the strongest of ties for holding members of the profession in unity and in harmony.

Bacon has said: "I hold every man a debtor to his profession." "He should be a help and an ornament thereto." It is well that we have the larger societies; most of them are necessary and serve a useful pur-

pose in the great scheme of medical organization and development; but the small county society often creates and supplies help and inspiration for its members, which it alone can give, and, which can not be obtained elsewhere. Some of the best inspirations that have come to medical men have been received from their brother practitioners who make up the medical society. Men who have common aims and interests are always benefitted when working together for their mutual improvement.

A man who has not society affiliation, is handicapped by the want of it, no matter in what field of science he may be engaged. Medical men who deprive themselves of the sympathy, cooperation and help that comes from the association of others of their profession, are not independent, but are showing a lack of wisdom. If the members of a medical community are interested in a society, in the success of which they take pride, they will invariably be found more progressive, than those of a community in which each one is pulling alone.

A medical society furnishes the help and sympathy which every doctor needs of his fellows, and the independent worker, whose originality and success give him a certain measure of independence, owes it to his fellows to associate himself with them; and will find that there is something for him to give, and something to receive.

"In medical men, as in all men, the strongest force for ethical advance and professional conduct is the intimate contact with other medical men better than ourselves, whereby 'Osmosis' nobler habits of thought and action seep across from colleague to colleague, from fellow to fellow."

The medical profession is taking a needful step in the education of the public. In the campaign of education now so well under way, there is an awakening in the public mind of the true work, and the possibilities in medicine. There is a notion, ancient and still prevalent, that there should be an aloofness and that the profession must not communicate these things to the public.

Some of the relics of medical superstitions have lingered too long—even to the present, and doctors of former days have encouraged a barrier of secrecy as to the workings and the discoveries of the medical profession. Work is now well under way toward the breaking down of these hindrances to the advancement of medicine. State and municipal associations and health departments, are publishing and distributing information to the public which is of great value. Popular magazine articles and many books give the public further enlightment. Certain laymen have rendered good service in this direction. But greater and more far reaching good will accrue, if medical men would contribute more on medical subjects for popular reading.

The physician should be made to feel that he is not laying himself open to the charge of self exploitation on invading the domain of the charlatan, when he communicates medical knowledge in the proper way to the public; the field of the medical man is constantly being attacked by the charlatan. If good work is to be done by health departments, the people must understand it and be in sympathy with it.

If people are ignorant of their meaning, now laws for the improving of public health will be satisfactory. Compulsory teaching of biology, human physiology and hygiene is one of the greatest needs in our public education today. The student should know something of himself and this study go before all others. Quoting from a recent contributor to advanced medical thought, "it has taken two thousand years to recover or to get away from the pernicious teaching, that one should take no thought of what we should eat, of what we should drink, or where withal we should be clothed, or. even of the morrow; enlightened people are now rejecting this doctrine and are turning to the joy and the interest in its own animal health." Most, if not all of this work of educating the public—that has advanced civilization along health measures, is the outgrowth of organized medical societies, the result of medical and scientific men meeting and binding together for the discussion of these vital interests to humanity.

The county, state and national medical

societies are teaching the world that there are certain fundamental and simple facts in animal pathology which are of more importance for the individual to know, than that he should know of the pathology of "nations the decay of dynasties, the overthrow of kingdoms or the moral disease of some foreign court."

If the citizen is taught to take pride in the military conquest of his country, he should also be taught to take pride in the conquest of disease. Let those be honored who have saved life as well as those who have destroyed it. There is no war which we should know of, or be taught with great zeal, than the conquests of smallpox, diphtheria, scarlet fever, the battles to save the mothers from puerperal sepsis, the conquest of pain by anesthesia, the victory of asepsis, and modern surgery, the routing of the alimentary infections in infancy, the campaigns against tuberculosis and cancer and the overcoming of the many destructive diseases of mankind. These really concern humanity more than the history of wars. Medical societies could do the progress of medicine additional service by supporting and encouraging committees on publicity or general enlightenment, whose function should be to advance the public knowledge and appreciation of the medical sciences. One of the greatest contributions in late years to the advancement of our profession and to the public good, largely as a result of medical organization, is the improvement in the teaching of medicine. While the United States, generally speaking, have supported high educational standards in the interest of public health, it should not be lost sight of, that assaults have been continuously aimed against these high standards. Greatest opposition has often been exercised against the enactment and maintenance of salutary medical laws.

The credit of creating these standards is largely due to the activities of the regular medical profession, through organized medical societies. Demands emanating from activities in county, state and national medical societies, have caused the interests of the people to be safeguarded by the profession imposing higher and more difficult requirements upon itself. It may be said to the great credit of medical men, that they have been behind every act of legislation which has raised the standards of requirements for the practice of medicine, and that organized medicine has been the first professional body to formulate its traditions of correct professional behavior, the first to write a code of ethics and to acknowledge allegiance to an oath—the oath of Hippocrates.

We have come a long way since the superstitions of the Dark Ages, but it has been a difficult journey and a battle all the way—a battle to free humanity from the belief that all of those pestilences which have so often decimated large portions of the world's population, were not due to the Hand of Providence and the will of God, but to conditions over which science now has largely the mastery. Superstition and ignorance are being supplanted by the science of bacteriology and which is now waging a tremendous battle against the real cause of disease.

The battle against the microbe is on, and, instead of looking to the stars for guidance, we are now looking into the microscope, the test tube and the X-ray, at the blood, the secretions and the tissues of the body. Instead of listening to the voices of the angles, we are now listening to the stethoscope and noting the signs of disease by many and varied instruments and other scientific methods of diagnosis.

Sometimes we hear people long for a return of the "good old days." How sad and really pathetic to contemplate and to realize that there were no good old days. Could one wish for a return of the times when more than one-half of the babies died in our cities before reaching one year of age; when nearly every one contracted typhoid or expected to have typhoid before adult life; when diphtheria was choking our children to death; when smallpox was almost certain to be fatal; when yellow fever was the scourge of our fair south lands; when hookworm disease was sapping the vigor of a large portion of society; when scarlet fever was the dread of every parent; when untold numbers of

expectant mothers were giving up their lives in the effort to bring forth their young and when "the Great White Plague—the Captain of the Men of Death," destroyed whole families when once it had invaded the home? Were those good old days, when people had no help to make them see, to hear, to eat, to walk when maimed or injured; when there was no interest taken in the crippled or deformed child, no one to strengthen its back and to straighten its limbs that it might have the chance to life and happiness? Are those days to be desired when a man or woman, who, just in the brightest, sunniest hour of life's voyage, had the misfortune of a nervous or mental breakdown, and were put under arrest as criminals, sent to jail, then to an insane hospital to be caged like a wild animal, and little attention given to the underlying cause of their disease that they might be helped back to sanity and restored to their families and to society?

No, thanks to the organized and progressive medical profession, such good old days are no more. While it must be conceded that great advances have been made in most lines of scientific endeavor, especially in manufacturing, and in the facilities for transportation; yet medicine has kept well abreast of the times and what is more and better, cared for, and protected, the health of the human race.

People no longer think of the clasped hand and the heavenward slant of the eyes as symbols of goodness.

We now think of the clenched hand upon the scrub brush and the cake of soap, as symbols of Godliness.

We have taught the present generation how to fight for everything clean and to demand those things that enable them to live wholesome lives.

How trivial seem the conquests of wealth, power, or even territories, as compared with the victories achieved over those epidemic scourges which are more devastating than wars. In these days, the science of medicine is ever pushing forward toward the unknown and the unrevealed. The medical expert is encroaching very largely upon the place of the legislator and the lawyer as well. Today most new developments of political practice or social activity leads towards him. People are now beginning to find that government is largely a matter of scientific administration; public health is as important as public morals and public safety, and is, indeed, at the basis of both. A people is not likely to be moral and it is quite certain not to be strong, unless it is reasonably healthy. There is coming rapidly a new stage in our public life. The soldier and all others who do the great work of nations are even more dependent upon the doctor than upon the strategist or the statesman, and the functions of the judge and the magistrate who deal with human beings, gauged by the standards of the statutes and textbooks, are being daily modified by the views of those to whom humanity is an aggregate of biological and physiological units.

Governments, in the past, have found themselves in contact or in conflict with the clergy, the lawyers, the traders; the agricultural and manufacturing interests and other classes and professions; but now the medical man has come into the arena, and, henceforth, will continue largely in the great arena of activities. The problems of the present day and those of the future are largely of national education, in the widest sense; and it is one of the great discoveries of our age, that the work of the school master, to be fruitful, must be intimately associated with that of the specialist in disease, nutrition and development. We shall never get good brains and good morals in ill nourished bodies. If we want to raise an imperial race of people, we must see that they are well nourished, and rightly fed. One of the most vital problems of today, is a better understanding of nutrition and proper foods for our people. Here the educationalist, the social reformer and the doctor must go hand in hand, and it is the scientist, the doctor, who will have the last word in the matter.

The public is now beginning to feel that the science of medicine and surgery is a thing in which one has an individual interest, to such an extent that does not exist in any other science. To some sciences, people look for much to add to the varieties and

amenities of life. To medicine and surgery, they have learned to look for something that comes home to all, individually much more.

The science of medicine is the real, virile, thing today, to which people are learning to look for relief of suffering, which takes away from life one of its greatest terrors. If people also have individual interests, not less is it true, that the science of medicine and surgery appeals also to the general thought of mankind, to the highest thought of mankind in a greater degree than does any other science.

Medicine and surgery are in their scientific work, as near to the study of what laymen would call the secrets of the universe, as any conceivable form of science can be.

The rock of lay ignorance, which in the past has been so hard to blast out and to crush, is no longer so intractable; and as far as the public is concerned, opposition to scientific advancement has given way to expectation.

People are now more willing to welcome an individual discovery than to oppose it with an old error. The imagination of man now waits upon the work of the medical profession in the expectation that at any moment it may quicken the pulse of mankind by lifting still further the veil, and showing them yet more and more of what has previously been, mysterious, unexplained and unintelligible.

Men and women of the medical profession, what is there in all the wide range of human activities that can surpass the science of medicine with its long history, its manysided service and its immense responsibility, as an appealing force to human beings thirsty for knowledge, anxious and willing to serve their fellow men, and gifted by nature with the quality of mind and heart which enables them to do so?

THE TRUTH ABOUT SYPHILIS *

By RUDOLPH RUEDEMANN, JR., M. D.
Dayton, O.

IT IS ONLY through educational measures and cooperation between the medical profession and the layman that the human race will be freed from the bondage of certain diseases. Cancer, Tuberculosis and Syphilis are the dread diseases which are leaders in causing loss of life and suffering. Cancer and tuberculosis have received their share of publicity in the last three years and are excellent examples of what can be accomplished by educational measures. The people are more aware of the early symptoms and so are reporting to the physicians for an earlier diagnosis thus increasing the percentage of cures attained. Of this triad there is no doubt but that syphilis death rate, attacks ous. It has the highest deathrate, attacks more people; the unborn babe, the infant, the youth, the adult and the aged are not immune from its attacks. It is hereditary and congenital, that is, it is passed on to the offspring. It attacks any part of the body and does not discriminate between the rich and the poor. So it is readily seen that the most treacherous of the three diseases is the one which is the least talked about and is the one about which the average person possesses the least knowledge. What the average person knows is wrong and harmful. Syphilis cannot be kept a medical secret if it is to be eradicated. The checking of the disease can only be accomplished by early diagnosis, vigorous treatment and the stamping out of all sources of infection by forcing all those infected to take good treatment.

A well lighted house is the best protection against the midnight prowler. So it is with syphilis. To become enlightened as to the seriousness, the possible sources of infection, the means of prevention and the proper methods of diagnosis and treatment will only

* Original paper.

mean a diminution in the prevalence of the disease. Watchful waiting is a dangerous procedure. Less waiting and more watching should be the keynote in this campaign against this disease. In this sophisticated age of jazz with its surreptitious drinking there is plenty to stimulate the latent animal instincts in man. Coupled with this so-called freedom of youth and the social bondage of the parents this makes possible the more intimate relationship of the opposite sexes under a hazardous environment. Those dealing with the younger generation know that they are left more to their own pleasures and that there is more intimacy and more drinking at social functions. Alcohol is known to release all moral inhibitions and all legal restraints are forgotten. With all its worldly wisdom the younger generation is woefully lacking in any knowledge of matters pertaining to sex hygiene. The youth of the land is standing on the threshold of a ruined future. An apparently innocent transgression makes the youth a slave to a disease which knows no master. So those who are sitting back and advocating watchful waiting, feeling that time will efface all derelictions and that the problem will adjust itself are doing the younger generation a grave injustice. Far better would it be for their future happiness and the welfare of the race to take them by the hand leading them along the sunlit rose-bowered path to the happy home of the future with its health, children and happiness Education is th.e torch showing the way. So let the nonsensical prudery be forgot and with open eyes let us strive for the betterment of the race.

History: Historically syphilis is very interesting in that it is linked with the discovery of our country. Historians are fairly well agreed that bones and historical papers show no definite evidence of syphilis having been on the continent prior to the return of Columbus and his sailors. The sailors of Columbus had evidently contracted this disease in the West Indies. In 1494 the armies of Charles VIII carried this disease from Spain to Italy. When these armies of different nationalities were routed, the scattering soldiers spread the disease all over Europe. This was the beginning of an epidemic and reports are available of the gradual spread from one country to another, from the Mediterranean to the British Isles and then east to the Orient.

Up to 1903 the beliefs regarding the causes of syphilis were indeed diversified and there were approximately 125 causes listed. Mercury was the chief form of treatment and it was given to the point of salivation but not salvation for few and far between were the cures. The progress of syphilis in many a case was not stopped and many of these late symptoms were attributed to mercury. Even in this day and age some people balk at using mercury because some of these ancient ideas are still current.

In 1903 two famous scientists, Metchnikoff and Roux, succeeded in inoculating monkeys with syphilis. In 1905 Schaudinn and Hoffman discovered the germ which was definitely proven to be the cause of syphilis. In 1906 and 1907 Wasserman perfected the test which received his name. Dr. Ehrlich was at that time experimenting with different combinations of arsenic endeavoring to find one which would kill the germ but would not injure the body. On the 606th combination he had such a drug which is commonly known as "606" or Salvarsan. Thus ended the 400 years of darkness for in a short space of time in the present generation was the germ, a method of diagnosis and a curative drug discovered. The way was opened for the ending of years of indescribable suffering and economic loss. In spite of all of these valuable adjuncts to the armamentarium of the physician, the progress of the disease continues. As long as the laity remains in ignorance of the sources of infection, the methods of diagnosis and treatment, they may as well be back in the dark ages for they do not avail themselves of the modern methods and so no results are obtained.

Cause of the disease: The disease is caused by an ultramicroscopic germ. Under a special microscope it is easily seen as a thread-like germ coiled like a corkscrew. It has from 8 to 14 spirals in it and they are evenly wound which distinguishes it from several others. It is from 4 to 14 microns in

length. As a micron is about 39-1,000,000 of an inch, the minuteness of this germ is almost incomprehensible. By special lighting arrangement the germ is visible and this is one of the best and earliest methods of diagnosis. In the first stages of syphilis the open sores are swarming with germs and by obtaining some of the discharge from the surface a diagnosis can be made. This is called the darkfield examination. The organism is very difficult to grow and to stain. The germ makes its entry thru the skin either by a break or one of the minute openings which are found in the skin. It has a predilection for the mucous membranes or the special forms of tissues which line the body cavities.

Clinical stages: The disease is divided into three stages, first or primary, secondary and third or tertiary or late. These stages depend on the clinical symptoms and time intervals and so are often misleading. One stage may extend to the next and blend with it or symptoms may be so slight as to be missed in either the first or second stage. Between the second and third periods there may be a long period of quiescence in which the patient may be free from any symptoms and feels fine. Then unexpectedly 5, 10, 20 or 30 years later unheralded and out of a clear sky comes the late syphilis attacking either himself, his wife or his child. This comes more often to the man or woman who had a small primary sore which hardly seemed worthy of any consideration or perhaps a couple of "shots" were taken and because all outward signs were dispersed it was taken for granted that a cure had taken place.

The first stage is the stage of infection. About three weeks after the unfortunate individual has come in contact with an open infectious sore or with some infectious discharge from such a sore, the primary lesion will appear. This is known as a "hard chancre". The relation of this disease to illicit intercourse has made it a tabooed subject. This does not give the innocently infected one a fair chance. The number of people infected by marital partners, the innocent babe with his stigmata and life's burden and the one infected by kissing or coming in contact with an infected towel, handkerchief, glass or pipe, has a disease which is no more shameful than tuberculosis or cancer. The youth who was innocently infected (for in his ignorance he responded to the forces of nature), has broken but a man-made law. In our blind prudery we tell them not of danger and pitfalls of these transgressions and expect an instinct of thonsands of years to be curbed by a law, the whys and wherefores of which he does not understand. When we realize that 95 per cent of the primary sores are located about the genitalia the necessity for the teaching of the fundamentals concerning syphilis is self-evident. Only 5 per cent of the primary sores are extragenital, or located on other parts of the body. In this class we find the physician who is infected by coming in contact with an infected instrument or discharge from an active sore; the babe who becomes infected by a diseased wet nurse; the one infected by being kised by a friend who has an open sore on the lip or in the mouth; the policeman bitten in quelling a brawl. The common drinking glass and numerous other sources of infection can be cited. The old method of vaccinating from person to person is passe but the antivaccinationists still use this as an argument and endeavor to make people believe that this is a common source of infection.

The primary sore may be so insignificant that it is overlooked or the application of a little powder may seem to heal it up. The primary lesion stays on from one to, approximately, four weeks but this is variable. With the primary sore the adjacent glands are usually enlarged. If the lesion is about the face, mouth or tongue, then the glands or "kernals are under the chin or below the angle of the jaw; on the hand the glands under the shoulder or in the armpit will be swollen and on the genitalia an enlargement of the glands in the groin will result. It must be remembered that it is very easy to have such a small sore that it is overlooked and this is especially true in the female.

The Secondary Stage: The secondary stage is the stage of invasion or generaliza-

tion. In this stage the disease becomes general and makes its way all over the body. Often it is associated with fever, the patient feels run-down and has a sore throat with an accompanying skin rash. The hair may fall out in small patches and there may be ulcerations in the mouth. This stage and the primary stage are the periods in which the patient is very contagious. The sore throat may be misleading and the patient attribute all his ill feeling to tonsillities. The rash is diagnostic in many instances. It is a general rash and the keen observer can distinguish this from others in many instances but the Wasserman test is usually positive and the patient has not had a chance to forget the primary sore. But it must be remembered that any or all of these symptoms may be lacking or so slight that they are overlooked. The secondary stage may last anywhere from 3 days to several months.

The symptomless period or period of quiesence: Following the secondary period there often comes a period in which there seems to be no manifestation of the disease. The patient appears to be in perfect health. The sore is forgotten and also the "grippe" attack or the "tonsillitis" following. But the blood may be positive and the spinal fluid also. This period of latency in which the syphilis germ seems to be dormant may last as high as 30 years. Then come the severe late forms of syphilis.

The third or tertiary stage: The third stage of syphilis may follow close onto the heels of the secondary, or it may follow a long period of quiescence. The third stage is the bugbear of all physicians for in this period the disease may attack any part of the body and may simulate or have the same symptoms as numerous other diseases. There is the late skin ulcer which does not heal; the heart involvment; the locomotor ataxia; the softening of the brain; the liver, spleen, kidney, bone, stomach and the various forms which are to be found in the late stage. The central nervous system and the brain syphilis are especially of great importance for it is usually this class of patients that one finds in the institutions and a burden to the tax payer. The different symptoms possible in this stage are too diversified to even begin to enumerate and it is a question of careful examination. The man trained to diagnose and treat syphilis will often make a diagnosis of syphilis where it is least expected because he has a lower threshold of suspicion and so is ever on the alert regardless of the social standing of the individual. It is not a rare ocurrence to see an honest law-abiding citizen suddenly show a reversal of form due to changes in the brain caused by syphilis.

Syphilis in infancy and childhood: Syphilis in the child may be hereditary, congenital or acquired. In hereditary syphilis the child shows some abnormality of formation. There are some teeth, bone and eye abnormalities which are diagnostic. This may not be discovered until the child is well up in years. There may be a sudden inflamation of the eyes or a deafness. There may be some ulceration in the nose or throat. There is a question as to when the infant is infected and it may not be a hereditary syphilis but an early infection of the undeveloped babe in the womb. The little wizened "old man" infant who developes "snuffles" or an early fatal pneumonia is often syphilitic.

In congenital syphilis there are more symtoms which are like those in acquired syphilis. The child appears normal but developes a skin rash of a definite suspicious nature. The child does not develop well and is backward. It goes from one ailment into another. This infant evidently received its infection late in its life in the womb.

An infant may acquire syphilis by coming in contact with an infected grown-up. In olden times a common source of infection was the wet nurse but this is under better control at the present time A recently reperted case of a 3 1-2 year old girl whose cut finger was dressed by an infected nurse girl and the little child developing a secondary rash before the diagnosis was made, demonstrates the precaution necessary.

Syphilis in the mother: There was a belief prevalent in the period before the Wasserman test that a mother could give birth to a syphilitic child and still be free of the disease. This idea has been exploded but it

is evident that the mother has a very mild form of syphilis which is often without symtoms. It is known that syphilis is the cause of many miscarriages and the expectant mother who has repeated miscarriages should have this question of syphilis as a cause ruled out. The early death in infants is frequently the result of syphilis. This high death rate is being cut down markedly by the careful treatment of the mother and observation with treatment during pregnacy. The awakening of the people to these facts will no doubt result in the cutting down of the number of innocently infected babes.

The Wasserman Test: The Wasserman test is a specific test. By that is meant that this test is only a diagnosis of syphilis. It is a very valuable aid in the diagnosis and is most important when done by a reliable laboratory. The Wasserman test is but a cog in the diagnostic wheel. One must take in consideration the history, the symptoms, the general and the special examination, all with the Wasserman test. Too often this test is the sole means of diagnosis and with so much at stake no one is justified in putting so much dependence on one test alone. It depends on the reaction of the body against the disease. A plus or positive test is a sign of the presence of the disease and a minus means that the disease is not present, is inactive or chronic. The blood test is reported as four plus positive, 3 plus positive, 2 plus positive, 1 plus, minus or plus minus. A 4 plus from a reliable laboratory in this section of the country where there is no yaws or leprosy means syphilis but with no history suggesting syphilis and no previous signs or symptoms it is advisable to repeat it. The same applies to a 3 plus positive. If the patient has definite symptoms or a positive history then the test just corroborates the diagnosis. The interpretation of a 2 plus, 1 plus and a plus minus depends on history and symptoms.

A negative test in the face of definite symtoms and a positive history requires further investigation and there is no doubt but that a person may have an old syphilis with a negative reaction. The clinical symptoms and the history must be carefully weighed against the blood test and diagnosis made accordingly.

Diagnosis: In the different stages of syphilis the methods of diagnosing the disease will vary. In the first week of the disease when the golden opportunity of a cure being obtained is at hand, the darkfield microscope is without question the best means of an early diagnosis. The blood Wasserman test is only positive in about 25 per cent of the cases at the end of the first week of the primary sore. This gradually increases until at the end of the fourth week or up to the appearance of the "secondaries" the blood test will be positive in approximately 100 per cent of the cases. Very few of the primary sores will show up typical enough that a physician can diagnose on inspection alone. This is too often a serious error and the well trained man is quick to admit that the more he sees the more does he depend on his laboratory tests for diagnosis.

The practice of self medication is very dangerous when applied to any sore of a suspicious nature. To burn, cauterize or apply a salve to a lesion means the losing of the opportunity for making an early diagnosis or the delaying of this diagnosis. Any suspicious genital sore should be investigated and the best procedure is to go, not to a drug clerk for advice, but to a reputable physician for a darkfield examination and a Wasserman test. It must be emphasized that a negative blood-test in the first week of the primary sore does not rule out syphilis. Too often this is done and the patient goes on his way rejoicing only to have his delusions dispelled by the appearance of secondaries. Even at that he is fortunate for many go through the secondary stage without being aware of the disease and then later on in life have the severer forms of syphilis.

The whole future of the patient, the marital partner and offspring depends on this diagnosis. Why not then demand the best and go into the question with thoroughness? The psychology of the average patient when

it comes to putting a value on their future health is incomprehensible. Rather than pay for a thorough examination upon which their future mode of existence depends they will take the advice of some friend who is wrong 99 times out of 100. Free advice is usually the worst kind of advice. The government has established clinics where the best of advice is given without cost to the worthy poor and this is an exception to the above rule.

The Secondary Stage: This is one of the periods in the disease when the diagnosis is made without much difficulty. To the trained physician the skin rash is usually diagnostic. With that there are the accompanying symptoms, the sore throat, the falling out of the hair, the mucous patches in the mouth, the fever and run-down feeling and the positive blood test.

Late Syphilis: In the late stages of syphilis the diagnosis is quite a difficult matter. It is a question of a thorough history, general examination with special reference to the organ or group of organs to which the symptoms refer. A blood test and a spinal fluid test should be made where indicated. A spinal fluid test should be made in all cases where there is a history of syphilis or any symptoms referring to the nervous system. It is known that the blood test can be negative and the spinal fluid test be positive. All patients before they are dismissed from treatments should have a spinal fluid test made. A spinal fluid test is a relatively painless and simple procedure and is not dangerous. There is no reason why anyone should object to this test. The diagnosis in the late stages is made by suspicion. A group of odd symptoms should arouse the suspicions of the patient and the psysician and with a careful examination, including a number of special tests, a correct diagnosis can be made in most cases.

Treatment: It is a difficult matter to outline the treatments. In the primary stage and the secondary, statistics have proven that 20 to 24 injections of the salvarsans or neosalvarsans (606 or 914) is necessary in the first year of treatment regardless whether the blood test is negative or positive to begin with. Any subsequent treatment is determined by the response of the clinical symptoms and the serological or blood tests. These treatments are given in definite courses and rest periods. Combined with or in the time between periods mercury or bismuth should be given. Mercury is given by rubs, intramuscular or hip injections or in the vein. Some physicians prefer to give sulpharsphenamin which is a new preparation of salvarsan and can be given in the muscles which is its only advantage. There are various preparations of 914 and 606. Some are made here, others in Canada, France, England and Germany. The American preparations are at least equal to the best which are produced and the physician who uses that old buncombe about giving "one shot" of that good old "German stuff" claiming it to be superior to several of the home product is guilty of the worst form of robbery and fraud. He is taking the patient's money and robbing him of his future health and happiness.

The physician or friend(?) who advises that 2 or 3 shots will cure is an enemy in the disguise of a friend or advisor. When Ehrlich was first experimenting with the drug he would give one injection and upon seeing the open sores disappear was elated with the quick cure. Since then however, experience has taught the medical profession that this is sadly not the truth. These same patients return later on with the late severe forms of syphilis. It has also been learned that in many instances one injection or two will often be worse than none at all for it robs the body of what little protection it has built up against the disease and leaves a path open for the deeper forms of syphilis. All text books, medical journals, pamphlets, reports by the United States Public Health Service and the statistics accumulated by specialists, advocate intensive treatment. With all this literature and advice on hand there is no excuse for any physician pleading ignorance. It is to be regretted that the open sores disappear with the first or second treatment. The average patient cannot realize that the disease can still be in the blood after all outward signs have disappeared. It would be

an act of providence if there were some outward manifestitations remaining until an absolute cure was attained. A negative blood test also is often taken as an indication of a cure and not only the patient but the physician will quit treatments at this point. This is often only an indication that the disease is checked in its progress and that more treatment is needed for an absolute cure. Better a little too much treatment as a matter of insurance than too little.

Late Stages: In the late stages it is a question of long treatment periods with rest periods and periods of observation. The late stages are so diversified that each patient is an individual problem. The patient must be treated according to his symptoms, his general make-up and his response to the disease. It is necessary to resort to the use of the salvarsans, iodides or so-called "potash," tryparsamid, mercury, bismuth, malarial inoculations and salvarsan in softening of the brain, intraspinal injections in syphilis of the nervous system and numerous other medicaments. Thus it is seen that the late syphilitic offers many problems and such patients are best treated by a physician who has made a special study of this class of cases.

With careful treatment and supervision many patients with late syphilis can be cured, others can have their symptoms cleared up and the progress of the disease checked, the majority of the patients are made more comfortable. Treatment is worth while in every case. One is never justified in abandoning treatment in even the very hopeless forms of syphilis.

Marriage: This is a much debated question. The views are continually changing and will do so as long as progress in diagnosing and treatment is being made. This should be left up to the physician who has charge of the patient and his judgment is determined by the type of syphilis, the amount of treatment and the response to treatment. In the late stages this is a difficult question to decide for one must take in the economic status of the patient. In the early forms of syphilis a minimum of three years is advisable. This gives about a year and a half of intensive treatment and the same length of time for observation. The active treatment of the expectant mother often will permit the birth of an apparently healthy child. This must be taken into consideration when the circumstances are known by both parties in the case where the late syphilitic desires to marry.

The State Law: There is a very excellent State Law and if it were understood by all and enforced as it should be there would be more sources of infection cleared up and patients would be taking good treatment. The secret of the patient belongs to the doctor who treats him. The patient is given a number and this number sent to the State Board. The physician is required to report when this number has completed a thorough course. The patient can change physicians any time he desires but the second doctor must report to the first and also to the State. If the patient neglects to take treatment then his name must be sent in and he is written to and advised to continue. If this isn't done then he is forced in for treatment. It is difficult to see how this takes away from the rights of a physician, or the patient. It is a protection for all people. The man who does not think enough of his own health or that of his offspring and does not care to protect his fellowmen must be made to do so. The charlatan and quack who treats according to the pocketbook will fight this law for it will put him out of existence. The physician who diagnoses by guess work and does not make use of the modern methods of diagnosis and treatment will naturally not approve of the law for the patient will soon learn what is good treatment and will patronize the physician who is progressive. The State Law requires a doctor to show that he is qualified to treat such cases. The conscientious physician and patient will cooperate in the enforcement of this law for they are vitally interested in the betterment of their own conditions.

Education: The education of the youth is the most vital issue at stake To teach them the truth about veneral diseases and the dangers incident to sexual exposure before they get the dangerous second-hand knowledge or satisfy their curiosity, is the solution of this

problem. The gravity of these so-called social diseases must be taught, also the sources of infection and the measures for taking care of themselves if infected.

The youth must be taught that abstinence from intimate contact with the other sex is not necessary and is far more manly, and respectful than "petting". The jazz proclivities of the present generation are viewed by psychologists as first rate stimulators of latent passions. Much better would it be to divert their excess vitality to outdoor exercises and athletics.

The salient points in the problem of eradicating syphilis are:

1.—Education of the youth regarding sex hygiene. The truth about sex and the social diseases.

2.—Early diagnosis and efficient treatment; careful treatment of all cases.

3.—Observance of the State laws; the reporting of cases and ferreting out of sources of infection.

4.—Optimism and cooperation. With a cheery outlook let all of us, physician and layman, work together towards the making of this modern Utopia for with the eradication of this so-called "Red Plague" much of the misery in this world will disappear. It can be done so let us up and do it.

SERVICE WITH DEVOTION *

By FRANK LEMOYNE HUPP, M. *D.*
Wheeling, W. Va.

IN BEHALF of the West Virginia Board of Examiners for Registered Nurses I want to express my appreciation for the very kind invitation of your president to again address this body of seriously minded women. In casting about for a subject I was confronted with a bewildering multiplicity of facts and questions to be faced, problems demanding solution, errors in your fundamentals to be met, discussed, eliminated or corrected. But as all of these interesting and vitally important points are of a personal nature belonging perhaps to your executive sessions, and dealing with the very fabric of your institution, I chose rather to speak of a more colorful theme, Service with Devotion or Duty with Sentiment, however humbly presented.

Dr. Harvey Cushing has recently said there is only one thing that can effectively bind people together and that is a common devotion. That such a devotion, more than any other possible influence, serves to overcome the self-depravities and conflicts inherent in us, which uncontrolled, represent the chief defects in our natures.

The Harvard savant in surgery in addressing the students of old Jefferson Medical College, has pointed out, with a beautiful human touch, which applies alike to nurse and physician, that "devotion is an attribute one cannot estimate and record by ordinary standards. How much the practicing doctor or nurse cares about their patients as individuals, apart from their being a source of livelihood; how much the medical scientists may be interested in promoting science rather than in securing his his own promotion; how much the teacher influences his or her pupils to their best efforts, unmindful of what the curriculum briefly requires of him; how much the student engages in his work for the work's sake, regardless of his marks or rating, all these things depend on a devotion which places spiritual above material rewards."

I trust you will not believe me to be indulging in visions of grandeur or impossible and exaggerated fancies, but may I venture the prophecy that within half a generation, such an organization as I now have the honor of addressing, sponsored by women of genius, unselfishly pledged to the highest standards, and to the service of humanity, working for the weal of their less fortunate and incapacitated brother, cannot but bring to this Mountain State association of nurses,

* Delivered before the annual meeting of the State Association of Nurses at Parkersburg, September 23, 1926.

those laurels belonging to the beacon light society.

I think I can see the northern star fulfilling your hopes and ambitions, just as it guides others over the blazed trail of serious and critical intentions.

I want to avail myself of this opportunity to tell you nurses of the excellent team work of our board, and to speak of the loyalty and splendid interest and efficiency of Miss Noel, Miss Reid, Miss Young, Dr. Harriet Jones, and of the unflagging and self-sacrificing endeavors of our secretary, Mrs. Wilson.

I think your association can point with pride to what he have accomplished with your help and sympathy, and let me say we are only at the threshold of greater achievement.

Along with your honored association we have unreservedly endorsed the founding of an Education Director or Committee which through tactful instruction will let the public know what you stand for.

With splendid cooperation of the schools for nursing we have definitely established that higher educational requirement of one year of high school as a requisite for admission to all schools.

We have outlined a standard curriculum as endorsed by the American Nurses association, for all schools.

We feel that there has been brought about a closer sympathy, a spirit of cooperation and loyalty on the part of every accredited school throughout the entire State, along with an intelligent understanding of our mutual aims.

The Board of Examiners, want you to know definitely our appreciation of your support and encouragement in our efforts for higher standards of education and for better nurses. We want you to know that there is no middle ground in this fight, that there will be no peace without victories, and that the Board is with you heart and soul, to be commanded by, if you please, and to serve under you, and if needs be to plow beneath the same yoke, always looking forward with confidence to that day when our goal will be reached and when our most sanguine expectations shall be an accomplished fact.

While in the path of duty, animated by a service with devotion it will come to the progressive nurse that her life from its very inception is a probation, a struggle and an opportunity to triumph over the present for the sake of the future. No doubt, as the pious clergyman has said, the route mapped out may seem impossible and distastful, but it is one which truth and reason sanction. Bitterness becomes sweet when leavened by buffeting experience, and service may be mad more endurable when disappointment and affliction stalk our way, because the lingering rays of life's illusions are mellowed by truth.

Years ago I read from the pen of a man of faith, I wish that I might tell you his name, but in substance he left a message which was indelibly impressed and can never fade from my memory—this good prophet's conention was, that the real and the ideal are inseparable in this world of work, and a true appreciation of this relation is indispensable to one's happiness.

We are prone by nature, before a harsh and bitter experience has unstrung the chords of the imagination, to invest life with a charm which clings to it through every change. The heart may bleed and the soul be swept by storms, but we can ever be thoroughly disillusioned; the vase may be shattered but the perfume of an early fancy will never cease to be exhaled from the fragments.

How fitting and proper in the earlier days of your service that you weave the seamless garb of a sentiment, with which the dull framework of life is clothed, then gold and purple tinge the threads that you work into the warp and woof of your bed-side experiences, and so the flush of vivid fancy fires the years that pass, and those that are to come. And so you go your way, through the stern realities of your life, rough friction with the world and countless contusions and abrasions that daily touch the raw, may play sad havoc with your aims and hopes, many lacerations, gaping rents with ragged edges in the garb your youthful fancy wove, yet the light and beauty never disappear. I beg you not to accept your lifes work as fancy paints it, maybe a dreamland whose horizon

is set in opal tints, as radiant as a canvas from the brush of a Raphael or an Innes, or as the luxuriant sunset over the Channel Isles, rich in the brightest hopes of a certain fulfilment. But remember as you journey, you cannot always eliminate that shadowy element of sorrow and disappointment.

You may link sentiment with duty or service with devotion, but never let go that sheet anchor of optimism, with abiding faith in an altruism conceived in and born of an humanitarian impulse.

Lytton Strachy, with astonishing brilliancy has penetrated into the most hidden depths, when he portrays the life of Florence Nightingale. What a beautiful study is the analysis of the thoughts, ambitions and achievements of this heroic woman. The indomitable courage and unfailing spirit, gifted with resourcefulness, determination and ability, God's first messenger in behalf of the afflicted, to the women of the world. How fitting that some reference should be made to the trials and hardships of "The Lady with the Lamp," particularly where service with devotion is discussed among nurses. No apology need be made when I seek your indulgence to review a twice told tale, nor need I crave your pardon should I quote from this English author's biographical study, just to review for you that which every nurse should know. "The saintly, self-sacrificing woman, the delicate maiden of high degree who threw aside the pleasures of a life of ease to succor the afflicted."

Let us review for a moment what she found in that pest hole at Scutari consecrating as she did the radiance of her goodness to the sick and the dying soldier's couch. "Florence Nightingale arrived at Scutari, a suburb of Constantinople on the Bosphorous, November 4th, 1854; it was ten days after the battle of Balacara, and the day before the battle of Inkerman. The organization of the hospitals which had already given away under the stress of the battle of Alma, was now to be subjected to further presure which these two desperate and bloody engagements implied. Great detachments of wounded were pouring in and were being shipped in batches of hundreds across the Black Sea to Scutari and the transit often lasted three weeks. Many were without blankets and often half clothed.

There was no food but the salt rations of ship diet, and no nursing available but that provided by disabled soldiers. The deaths en voyage were frightful, one by one the living or dying were carried into the barrack-house. Behind the doors of which Hell yawned and there were want, neglect, confusion and misery. Sewers and cess-pools wafted their poison into the wards, multitudes of vermin swarmed everywhere.

The building was far too small yet it contained four miles of beds and crushed together so close that there was but just room to pass between them.

There were neither supplies nor furniture, and beer bottles were used for candlesticks.

In these surroundings, those who had been long inured to scenes of human suffering, here found a depth of horror which they had never known before. The guardian angel, Florence Nightingale came into that Inferno and did not abandon hope. Here the foundation stones of your profession were laid by this God-fearing woman, here was service with devotion. What a priceless heritage the Lady with the Lamp has handed down; certainly her life and example have erected a monument more enduring than brass or marble.

Perhaps you cannot all have the vision that came to the founder of your art at Scutari, yet you can be a benificiary of that trained intelligence and a share-holder in her legacy to womankind.

I had not intended at this time to disturb the tranquility of this gathering by any of the present day problems, but I cannot let this opportunity pass without espousing the cause of the nurse, not that your profession needs any defense. But wherever one travels one will occasionally hear some untutored layman make reference to what they call exorbitant material demands of the modern nurse. One of the purposes of my consenting to come to Parkersburg in response to your president's invitation was to answer this uncalled for libel and to tell the people of West Virginia, that the modest stipend

asked by our nurses hardly provides a living wage, when one reflects over the demands made for a long and oft times exhaustive day's duty. Did these critics but know as we physicians know, what of altruism with this service with devotion, of the broken health suffered from contracted contagion, of broken resistance from hours of over-work, of the burden of expense attached to days off duty, or intervals between cases, they would modify their language, and blush before their senseless vituperations.

In a recent visit to New York City, I had the privilege of personal interviews with Miss Roberts, the editor of the American Journal of Nursing and Miss Blanch Pfefferkorn, the efficient executive secretary of the National League of Nursing Education, at the nurses headquarters, 370 Seventh avenue, as well as receiving an inspiration from the reading of that excellent monograph on "Hearsay and Facts in Private Duty" from the pen of Miss Janet Geister and would ask for your indulgence for a moment, while I tell you of the present day conditions in the city of New York, which is but a reflection of the *status quo* in many of the American cities.

The average earnings of a private duty nurse during the week of Feb. 21-28, one of the peak weeks of the year in illness, amounted to $31,26—only 49 cents an hour—or about what a char woman, a servant, or an unskilled laborer gets, according to a survey sponsored by the New York State Nurses association in cooperation with the committee on Grading of Nursing Schools.

"These earnings do not mean that the average weekly salary of private duty nurse is $31.26," Miss Janet Geister, R. N. of the Associated Out Patients Clinics of New York City. "The nurse's regular income drops below this amount because she has to live at her own expense in the intervals between cases, and frequently has to wait five or six weeks for a call in July or August."

During the week of Feb. 21-28, the average nurse worked five days out of the seven, and 12 per cent of the 1,409 nurses were idle the entire week. Of the total number only 82 nurses earned more than $50 in the week and of this number, 80 were in New York City or Brooklyn.

Possibilities of a heavy exodus from private nursing are seen in the survey recently taken. Of the nurses who answered a questionaire, 564 say they intend to leave the private duty field, because of economic conditions.

Miss Bruere has seen fit to compare all this with what other women earn. "The basic union rates for typists is $21 a week, and $50 for stenographers is not unusual. They usually work twelve months in the year, five and a half days a week, and have a vacation at the expense of their employers. Teachers in the New York elementary schools receive from $1,500 to $3,250 a year, working ten months, five days a week." Does it require other facts and figures to quiet those who seem to find satisfaction in thrusting their poisoned darts at an honorable profession?

I am prepared today to fight for the building of graduate nurses homes in at least four of the larger cities of this state, where moderate priced and comfortable apartments may be constructed, tax exempt and yielding for the philanthropic builder 6 per cent or more on his investment. The rooms in these apartments not to exceed $9 to $12 per month. I think I hear you say "a pipe dream, and impossible". My good friend Mr. Walter Stabler the public-spirited and talented comtroller of the Metropolitan Life Insurance company of New York told me a week ago that his company under his supervision has just completed fifty-four houses to accommodate 2125 families or 9000 persons. Each apartment contains two bedrooms, a living room or library, bath room, dining alcove and kitchen, and so eagerly are these apartments sought, that even now he has a waiting list of nearly 20,000. I am sure this idea can be carried out in Wheeling and I am hoping some public spirited man of means here in Parkersburg will lead the van and beat Wheeling to it.

One other point. Martha Bruere in a comprehensive survey of this whole subject in the September Century makes a valuable suggestion. The part time nurse or extending the nurse over two or more families, thus the

family with a slender purse will purchase a half, a third or even a fourth of a day. The financial burden would not be so heavy for the middle class and there would be no diminution in the daily or weekly income for the nurse. Miss Bruere suggests that there is nothing inherently indivisible about twelve hours; the thing is not only possible but it is actually being done

A second. suggestion is the education of the public, not only a definite course in the fundamentals of nursing to be made a part of every public and high school as well as similar instruction in every woman's college. When this has been accomplished it requires no stretch of the imagination to see the patient's wound made clean, his fevered brow made cool, and his body rubbed in ointment of a sweet savor and nursed back to health. It has been estimated in a canvass of many hospitals that the actual time a nurse must work in the average case, is about four hours daily, or one third of the twelve hours indicating that a part time nurse, as Miss Bruere has pointed out, just as we have a part time doctor, would solve much of this problem and quiet the clamor of the middle class without impoverishing the worthy nurse. The question has been asked how will this part time nurse affect the low pay, killing hours and unemployment? And in answering the question this writer suggests that it puts these evils where the nurse can meet and remedy them, and do away automatically with what has wrongly been called an "impossible profession."

I have abiding faith in a happy solution to this problem and feel that it must come, I hope a committee from your association will be appointed to give it publicity and point out its fallacies if they exist.

I can think of no more fitting thought to close this heart to heart talk with you nurses than to quote from the lamented Stephen Faget's "Confessio Medici" and used by Dr. Cushing as a valedictory to his scholarly sermon already alluded to; "Every year young men enter the medical profession who neither are born doctors, nor have any great love of science, nor are helped by name or influence. Without a welcome, without prospects, they fight their way into practice; they find it hard work, ill-thanked, ill-paid: There are times when they say, "What call had I to be a doctor? I should have done better for myself and my wife and children in some other calling." But they stick to it, and that not only from necessity, but from pride, honor, conviction; and Heaven, sooner or later, lets them know what it thinks of them. The information comes quite as a surprise to them, being the first received from any source, that they were indeed called to be doctors; and they hesitate to give the name of the divine vocation to work paid by the job, and shamefully under-paid at that. Calls, they imagine, should master men, beating down on them; surely a diploma, obtained by hard examination and hard cash, and signed and sealed by earthly examiners, cannot be a summons from heaven. But it may be. For if a doctor's life (and may I add the nurses also) may not be a divine vocation, then no life is a vocation, and nothing is divine."

"Why doth one day excel another, saith the Son of Sirach, when all the light of every day in the year is of the Sun? By the knowledge of the Lord they were distinguished; and he varied seasons and feasts; some of them he exalted and hallowed and some of them he hath made ordinary days." In your service with devotion:

"Look to this day for it is the very life of life,
In its brief course lies all of the varities
and realities of your existence
The glory of action, the bliss of growth, the
splendor of beauty.

For yesterday is but a dream and tomorrow only a vision, but Today well lived makes every yesterday a dream of happiness and every tomorrow a vision of hope. Look well therefore to this day for such is the salutation of the Dawn."

"SOME POINTS IN THE DIAGNOSIS OF HEART DISEASE"*

By B. S. PARKS, M. D., M. Sc.
Parkersburg, W. Va.

THE FIRST STEP in the study of a case of suspected heart disease is an accurately taken, and carefully recorded history.

Careful inquiry should be made concerning the health of parents if living, and the cause of death if deceased, as a history of paresis, tabes or anurysm in a parent would lead to a suspicion of syphilis in the patient and cause a careful search for any stigmata of inherited lues. A family history of tuberculosis does not indicate the presence of any specific disease, but does indicate the likelihood of poor resistance to infection in any form.

The patient's past history is of great importance, for instance: a history of growing pains during childhood, a history of tonsillitis, chorea or rheumatism, at once causes one to think of the so-called rheumatic heart, because of the intimate relationship existing between these infections and disease of the heart valves, and especially the mitral valve.

The etiologic relationship existing between the rheumatic group of diseases and heart disease, while well known to the average physician are at best partially, if at all, appreciated or understood by the general public, and the physician doing general or family practice owes it to his clientele to instruct them concerning the danger of neglected foci of infection as a cause of these diseases and which serve as danger signals which, if properly interpreted, will enable the physician to prevent further damage to the heart, by at once eradicating the cause.

We physicians should educate the people, and if the relationship of focal infections to heart disease is explained, the people as a rule will heed our advice, and have tonsils removed, teeth extracted, and co-operate in every way; in this way only can the great number of crippled hearts we are called upon to relieve be prevented, and the resultant human wastage and its attendant suffering be reduced to a minimum.

Few physicians ever actually realize the appalling prevalence of heart disease; Cabot in a study of statistics from many sources seems to prove that at a conservative estimate 5 per cent of the patients seen in private practice are afflicted with some form of valvular heart disease, and in hospital practice the proportion is much greater, 10 to 15 per cent. The New York Board of Health after an examination of thousands of cases find that at the least 1 per cent of school children have valvular heart disease.

The causes of heart disease are almost innumerable but only some of the most frequent need be enumerated here, after the rheumatic group of diseases we encounter puerperal sepsis, scarlet fever, local foci of infection in the teeth, tonsils, ears, sinuses, gall bladder, appendix and the prostate gland in the male and the Fallopian tubes in the female as direct causes.

Syphilis is a frequent and grave offender and because of its stealthy invasion, grave pathological changes, not only in the aortic valve and the bundle of His but in the Aorta also, often causing damage that is beyond repair, before the patient or his physician is aware of the existance of any serious trouble; often the first careful examination discloses an anurysm whose subsequent presence had been unsuspected even. The ravages of syphilis appear years after the primary attack, generally from the 40th to the 50th year of age.

In pneumonia and typhoid there may be direct cardiac involvment during the attack, though especially in typhoid, the heart may be indirectly involved, by the typhoid bacilli finding a lodgment in the gall bladder and giving rise to bacterial invasion of the blood stream for years. These may unmask a di-

* Read before the Parkersburg Academy of Medicine, April 7, 1927.

seased heart, which had remained latent for years, until the extra burden imposed by the acute attack of disease proves too great a strain upon an already damaged heart muscle and signs and symptoms of cardiac failure appear. Erysipelas, carbuncles and furunculosis must not be ignored, as they may cause such wide spread infection as arthritis, pyemia, bacteriemia and a general blood stream invasion, followed by involvement of the endocardium and especially the valve leaflets.

The injury inflicted upon the heart by diphtheria is well known, yet we often seemingly forget that the diphtheritic toxin is very persistent, that it lingers long after apparent recovery from the attack, and we often fail to insist upon proper and prolonged rest in bed, thereby giving the heart sufficient time to completely recover from the effect of the diphtheria toxin, so the history of an attack of diphtheria should suggest a careful study of, not only the heart valves, but the state of the myocardium also.

Disturbed endocrine balance often results in cardiac pathology and should be considered in taking a history.

Fatty heart is not a disease but a pathological condition occurring after diphtheria, in angina pectoris, etc.

The size of the heart is of importance, as we know that a permanently enlarged heart is a diseased heart, and because of the diagnostic importance of accurately knowing the size and shape of the heart, for this knowledge enables the examiner to more accurately determine the real state of the heart muscl and the great vessels, and to detect valvular lesions and to not how the myocardium is responding to the extra burden imposed upon it by disease. The heart may be enlarged by hypertrophy (increase in muscular mass) or by dilatation (stretching of its walls and increase in capacity of its cavity) or the two conditions may, and usually do coexist. There is, for instance, a marked contrast between the heart of arterio sclerosis with an associated aortic incompetency, and the dilated heart of paroxysmal tachacardia.

To determine if the heart is enlarged and the degree of such enlargement, one must have a standard, which signifies to the examiner the dimensions of a normal heart and its surface relations to certain points on the chest wall

The size of the heart varies according to weight, height, age sex, chest measurements and to a slight degree upon the position of the body at the time the measurements are made. Muscular development enlarges the heart in a ratio proportional to the muscular development of the chest wall and the body as a whole.

The most accurate correlation is between the size of the heart and the body weight; all clinical methods of determining the size of the heart are only approximate.

The Orthodiagraphic method, if in competent hands, is the most accurate method we have at present, and the only objection to its use is that a skilled worker is required, some time is consumed, and the necessary apparatus is costly. These objections are insurmountable in small communities.

From the study of numerous cases by many observers, using various methods an average standard has been accepted as the normal, and from this standard we determine the degree of enlargement of the heart. The average diameter for a man of one hundred and nine to one hundred an seventeen pounds is eleven (11) c. m., as determined by Clayton and Merrill by a study of cases comparing the weight of the individual and the diameter of the heart. They found that by taking the above figures as a standard that a change in diameter is noted for each additional ten pounds of body weight and that for a man of one hundred and sixty to one hundred and seventy-five pounds that the diameter of the heart was thirteen (13) c.m.

The Teleroentgenogram is exact and quick. The picture is taken with the tube two meters from the patient, to minimize the optical distorition of the rays.

LeWald finds the greatest normal transverse diameter is from thirteen to fourteen C. M. (5 1-8 to 5 1-2 inches), the exposure being made at 28 inches. In the long dis-

tance exposures, he finds the apex point is 8 c. m. from the median line (3 1-8 inches in the average normal person, and the right border 3 c. m. (1 1-4 inches) from the median line.

Bordeen concludes that the most accurate formula for computing the size of a normal heart is the square of the Teleroentgenogram. This is quickly estimated by a planimeter.

Estimating the person as weighting from one hundred and twenty to two hundred pounds, then twelve to fourteen c. m. would be the best figures to use as a standard for diameter.

The X-ray study should include a study of the great vessels near the heart, and the width and shape of the aortic arch. The width of the aortic arch varies somewhat with age, but the width is five to six C. M. for a person up to forty years of age, and six to eight c. m. for those over sixty years of age.

These are only approximations, but serve our purpose very well in a clinical way, one caring to more carefully measure the Aorta will find the admirable table of measurements given by Vasquez of value.

The normal apex impulse is a sustained thrust, definitely palpable in the fifth interspace, three to four and one-half inches from the middle of the sternum. The impulse is confined to a small area in a normal person. Lews thinks the outer border of the circumference of the apex impulse is the best guide to the location of the left border of the heart. In enlarged hearts it is a guide as to the size but not to the border of the heart.

The mid-sternal line is the best point from which to determine the location of the apex and the right nad left border of the heart Mid-Sternum. to apex is 3 1-2 to 4 inches (9 to 10 c. m.). Lewis gives the figures as 3 to 4 1-4 inches (7 1-2 to 11 1-2 c. m.).

Goodman concludes that not only weight, but chest measurements as well are useful criteria in computing the size of the heart, as for instance, by his table, mid-sternal line to left border of heart is 8 c. m. in a man weighing 110 pounds, increasing to 11 c. m. in a man weighting 200 pounds. In a case with a chest circumference of 30 inches the mid-sternal to left border measurements is 8 c. m. gradually increasing to 11 c. m. in a chest 39 inches in circumference.

A definite maximal impulse more than 4 1-2 inches from mid-sternum is direct evidence of an enlarged heart and especially if the impulse is in the sixth interspace.

Percussion—The left border of the heart is best located by percussing inward from the axilla; then compare percussion finding with outer border of apex impulse. To locate the right border of the heart by percussion, one should first locate the upper border of liver dullness, then percuss inward on a line just above the line of liver dullness. A definite cardiac dullness to the right of the sternum means either that the heart is displaced to the right or that the right auricle is engorged and enlarged.

Aortic Regurgitation

A diastolic murmer at the base, usually heard in the second right interspace, though often in the third left interspace, transmitted down the left border of the sternum and to the vessels of the neck is indicative of incompetency of the aortic valve. This murmer is heard in the second right interspace, third left interspace or midway between these two points, at the ensiform and occasionally in the left axilla and is transmitted to the vessels of the neck and along the sternal border. The murmer is often heard best to the left of the sternum in early cases.

In the young rheumatism, and in middle life syphilis are frequent causes of a damaged aortic valve, so a history of one of these infections is of great significance. Cabot, in an analysis of 152 cases, found the distribution of causative diseases as follows:

Rheumatic group	104
Syphilis	47
Arteriosclerotic type	1
	152

Anemia is often marked in these cases, probably because of the infecton which is present upon the heart valves or due to the syphilitic toxemia which is present in many cases. Further examination discloses a pulse of the Corrigan or water hammer type. Throbbing carotids and often a generalized

vascular throbbing may be noted, "the dance of the arteries." Quincke's pulse, or capillary pulsation is noted in finger tips, lips, etc. Musset's sign, rhythmic jerking movements of the head, synchronous with the heart beats is often present in advanced cases. Duroziez's systolic shock, or double murmur is heard in the femoral and other large arteries.

The to and fro murmur of Traube, the pistol shot sound of Traube, and marked pulsation of the abdominal aorta are present. Sibson's sign, a diastolic shock at the base, is present. The heart is enlarged and the diameter consequently increased.

The blood pressure reading is of interest, as a rather high systolic and a low diastolic reading is noted, giving a pulse pressure usually double that found in health, which is 40 to 50 points, while in aortic regurgitation the reading is 80 to 100 if taken in the arm, and if taken in the leg it is much higher. This is known as Gibson's sign. The pulse pressure in the leg is about double that in the arm in aortic regurgitation.

The polygram is characteristic — high ascent—top sharp, quick drop and a poorly developed dicrotic notch and wave. The electrocardiogram usually shows a left preponderance. The diagnosis of aortic regurgitation can be based upon the following findings: a diastolic murmur at the base, transmitted to the vessels of neck and along sternal border; increased size of left ventricle; high pulse pressure and Gibson's sign; Corrigan's pulse, and Quincke's or the capillary pulse.

Mitral Stenosis—Stenosis of the mitral valve is a common sequel of rheumatism, chorea, repeated tonsillitis, scarlet fever and chronic infection from any source. The infection is not confined to the valve but attacks the myocardium as well. It is the most common valvular lesion associated with fibrillation, especially in the young.

The stasis in the auricle results in a comparative frequency of thrombosis as a complication, hence the common occurrence of embolism in this disease. Mitral stenosis is the most common cardiac cause of hemoptysis.

Goodman speaks of impaired resonance at the apex of the left lung in mitral stenosis, resulting in frequent diagnostic mistakes, the lesion being mistaken for tuberculosis. Pressure of the left auricle upon the lung and vessels is the cause of the congestion which produces a dull note upon percussion.

Aphonia is frequently encountered in these cases, due to pressure of the left auricle upon the left recurrent laryngeal nerve. Clubbing of the fingers, flushing and cyonosis of the cheeks and lips, and often an icteroid hue of the skin is observed.

The apex is often not displaced at all. The degree of hypertrophy present does not displace the apex either downward or outward. A thrill is of diagnostic value if diastolic in time and purring in character. The heart is widened transversely. Auscultation is probably of the greatest value of any method of examination in the diagnosis of mitral stenosis.

A diastolic murmur at the apex means organic heart disease and usually mitral stenosis, but study may prove it to be a Flint murmur and as such arises in the aortic area. The diastolic murmur of mitral stenosis may be mid-diastolic, or may not have a presystolic element at all, or it may continue throughout diastole. The presystolic murmur may be absent when other murmurs are present and the heart action is regular. Upon the onset of fibrillation the presystolic murmur disappears and the earlier diastolic murmur persists.

In a well marked case of mitral stenosis the murmur may not be heard at the first examination, especially if the patient is sitting up when the examination is made. But if there is a definite history of rheumatism and a systolic murmur is present, then one should carefuly search for signs of stenosis. The murmur is heard best by having the patient lie upon the left side and turn slightly forward, it may be necessary to have the patient hop on one foot some 25 or 30 times before the murmur can be distinctly heard. The murmur is heard best just inside the apex impulse. The mitral stenotic murmur is low pitched, often described as a rumble. The first sound at the apex is

sharp, snappy and flapping in character, and it may show a duplication. The second pulmonic sound is accentuated and such accentuation, if there is a history of rheumatism, should further serve to direct attention to the mitral valve.

The electrocardiogram may show auricular hypertrophy; that is—a P. wave over 3 M. M. in height, or over one-tenth second in duration, also right ventricular preponderance. The electrocardiographic evidence should cause one to be reasonably sure that a mitral stenosis is present. If fibrillation is present the P. wave is absent.

In the differential diagnosis of a case of mitral stenosis the examiner should not neglect to keep in mind the possibility of a Flint murmur, called the murmur of functional mitral stenosis. The Flint murmur may be accompanied by a thrill, but if one remembers that an aortic regurgitation accompanies the Flint murmur, the differentiation is made easily. There is another murmur which should be kept in mind in making an examination of the mitral valve—the Graham-Steele murmur. If one encounters a diastolic murmur heard best to the left of the sternum, this murmur should be thought of. Some clinicians consider this a very rare type of murmur, while others contend that it occurs rather frequently.

It is a high pitched, diastolic murmur, heard best at the third left costal cartilage and transmitted outward and downward to the left. It is due to functional regurgitation through the pulmonary valve, due to stretching of the conus arteriosus and the orifice of the pulmonary artery. Cabot emphasizes the frequency with which a diastolic murmur to the left of the sternum occurs in association with mitral stenosis—he was, however, unable to demonstrate at autopsy that the pulmonary artery was dilated.

In Grave's disease a diastolic murmur is frequently heard over the sternum. Rarely a cardiac-respiratory murmur is diastolic in time. In mitral stenosis the apex impulse is a sharp tap, with a quick recoil, while in aortic regurgitation there is a powerful heave with a slow recoil. In mitral stenosis the pulse is small, pulse pressure low or normal, whereas in aortic regurgitation the pulse pressure is high and the pulse Corrigan type. The X-ray shows the "Mitral Shape" of the heart, while in aortic regurgitation the heart is elongated. The electrocardiogram in mitral stenosis shows right preponderance.

The diastolic murmur of aortic regurgitation is transmitted along the border of the sternum and to the vessels of the neck, is higher pitched and continues throughout diastole. White emphasizes that in mitral stenosis the murmur begins at a definite time after the second sound.

Though systolic murmurs are by far the most common murmurs encountered in heart disease, still they are much less helpful in the diagnosis of organic heart disease than are the diastolic murmurs.

Probably the most common murmur is the cardio-respiratory, heard at the apex, over the precordium and occasionally at the angle of the left scapula. It is a murmur of short duration, high pitched, heard best during inspiration. It disappears upon having patient hold his breath.

The next most common systolic murmur is heard at the pulmonary cartilage, especially with the patient in a recumbent position. It may be heard at the apex also. Unlike the murmur of pulmonary stenosis, it is inconstant, is not transmitted along the clavicle, and is not accompanied by a thrill and there is no history of cyanosis.

Aortic Systolic Murmurs—An aortic systolic murmur may rarely mean the presence of aortic stenosis, but ordinarily it signifies only a stiffening of the valve leaflets, roughening of the intima of the aorta, or some local condition.

In men past middle age, with a widened aorta, the murmur may be very marked, but the harsh, ringing sound will enable the examiner to distinguish it from the murmur of aortic stenosis.

In real aortic stenosis a thrill of marked intensity is present at the base of the heart, a rough systolic murmur at the aortic cartilage which is transmitted to the great vessels. Most commonly aortic stenosis is associated with at least some degree of incompetence of the aortic valve. The examiner

should keep vividly in mind the fact that an aortic murmur alone is not sufficient evidence upon which to make a diagnosis of aortic stenosis.

Tricuspid Systolic Murmurs—These are heard with the greatest intensity at the ensiform. Strenuous exertion may provoke them. A systolic pulsation and an engorgement of the veins of the neck are of more importance in diagnosing cardiac failure than is the presence of a murmur.

Mitral Systolic Murmurs—Until the more careful study and evaluation of the significance of the mitral systolic murmur during the world war, the presence of a systolic murmur at the apex which was transmitted to the axilla was taken as positive proof of mitral incompetence.

Clinical observation supplemented by post mortem study has shown the fallacy of this belief. We now know that identical murmurs are produced by a lax ring (with no apparent lesion), and by a distorted valve with almost equal frequency.

If a mitral systolic murmur is constant from day to day it then suggests an organic basis. If a mitral systolic murmur is pres ent and the patient gives a history of rheumatism, tonsillitis or chorea, then one should place much more emphasis upon its presence and should carefully examine for any evidence of stenosis of the mitral valve as the two lesions are very often associated, much more frequently than generally realized, and a careful examination will disclose a stenosis of the mitral valve which in turn will often explain many symptoms the patient has complained of and which we had failed to properly account for.

The exercise test should be used in our examination of these cases, as indistinct murmurs are often intensified by some light exercise—hopping 20 or 30 times, etc.

If a mitral systolic murmur is due to a real organic change in the value it should lead to some degree of muscular hypertrophy and a right preponderance is often found on electrocardiographic examination.

Heart Block—Simple prolongation of conduction is usually demonstrated only by instrumental study. In the cases where there is an occasional or regularly recurring dropped beat, the irregularity can be differentiated from a premature beat by listening over the heart at the apex; instead of a premature beat only silence is found, the duration of which is longer than the normal interval. A pulse rate of fifty beats per minute if regular rhythm may be only a bradycardia, but suggests a block. A rate of forty per minute suggests a 2 to 1 block, and in complete block the rate is 30 if the impulse arises high in the bundle. A 2 to 1 block may be difficult to differentiate from a slow normal rythm, but a 2 to 1 block is an unstable condition. By exercise, posture and by the use of atropine we may be able to alter the block or to even abolish it. Higher grades of block, as a 3 to 1 or a 4 to 1 block, are still more unstable and tend to pass into a complete block. The Stokes-Adams syndrome, which is a group of symptoms appearing in a case with some degree of disturbed conduction and tending toward block, is a very spectacular state of affairs, causing great anxiety to the patient, if he is conscious, and alarming his friends greatly. These cases of Stokes-Adams syndrome often go on to complete block.

Paroxysmal Tachycardia—A regular apex beat of 150 or more, uninfluenced by posture and unassociated with any of the toxic causes of simple tachycardia, especially if there is a subjective history of the onset and termination of the attack, assists greatly in arriving at a correct diagnosis.

Tachycardia must be differentiated from flutter, of course instrumental study by an expert electrocardiographer is very desirable, but in the absence of such assistance, one can gather some idea of the condition by recaling certain facts—namely: That auricular flutter when once it becomes established tends to become permanent. Tachycardia upon the other hand comes by attacks. In flutter the rate is more influenced by position, exercise and drugs than in paroxysmal tachycardia.

The action of Digitalis in the two conditions is of interest, for instance in paroyxsmal tachycardia it does not change the rate at all, though it at times does seem to assist in terminating the attack. In flutter digi-

talis often produces a fibrillation in place of the flutter.

Auriclar Fibrillation—A persistent, irregular rhythm of 100 or over is nearly always auriclar fibrillation. It is the maximum irregularity of the heart, once established it tends to remain permanently. A marked pulse deficit is a characteristic.

The pulse becomes more irregular upon exercise while in extra systole, exercise causes the irregularity to disappear, to reappear upon resting, but to cause the irregularity to disappear in extra systole the rate must be increased to above 120 per minute.

Chronic Myocarditis—By the use of the electrocardiograph, our knowledge of myocarditis has been revised and we know that myocarditis is present when we find a heart that is permanently and definitely enlarged. In the enlarged heart of general hypertension, and of secondary contracted kidney, we can diagnose myocardial change in nearly every case. In auriclar fibrillation, auricular flutter, heart block and alternation, myocarditis is present. In aortic incompetence, of rheumatic origin, the myocardium is damaged and this is true in luetic lesions of the aortic ring and aorta. In mitral stenosis the myocardium is damaged and many cases develop fibrillation.

In aneurysm of the aorta we find that nearly all cases die from heart failure due to a weakened myocardium and not to rupture of the aneurysm.

In true angina pectoris while the heart may appear to be normal in size ad functionally seem sound, still we know that there is degeneration of the myocardium as well as an invasion of the coronaries by the sclerotic process. The heart of toxic goitre and uterine fibroids is the seat of myocardial degeneration.

A healthy cardiac musculature insures an efficient circulation and circulatory failure is due to myocardial changes. In impending myocardial failure, the patient finds he is unable to meet the usual demands placed upon the heart, without discomfort. He finds that he is easily fatigued, becomes dyspneic upon slight exertion, suffers from digestive disturbance, has a sense of fullness and discomfort in the stomach, a feeling of oppression in the chest and cough. He sleeps poorly, is disturbed by unpleasant dreams and feels apprehensive and nervous. He is easily fatigued and even mental effort is difficult or impossible.

These premonitory symptoms grow progressively worse if proper heed is not given and complete myocardial failure will be the result.

I have briefly and in a rather disconnected way endeavored to point out a few of the important diagnostic points in the study of heart cases. Each case must be studied as an individual problem and not only the signs and symptoms considered but the history of previous diseases must be carefully elicited and their bearing upon the case carefully evaluated. We must stop basing a diagnosis upon the presence of a murmur alone and must give a murmur its proper rating as being only a link in the chain and not the whole diagnosis.

We must base our prognosis upon the actual state of the heart and not upon some murmur or even a demonstrated leak in a valve. The war demonstrated that numerous cases of mitral murmur and an apparent leak, if properly compensated could march as far and in every way undergo as great physical exertion as anyone else, while the interesting functional condition known as N. C. A. (neuro circulatory asthenia) occurring in cases with an apparently normal myocardium, yet were incapable of sustained physical or mental exertion of any kind. So the heart must be studied not only as to the actual state of the heart muscle but also its reaction to disease in other organs, and its reaction to both physical and mental stress and strain, necessitating a general physical and mental survey of the patient before a prognosis can be given and proper advice as to work, form of work and even amusements to be participated in is given. Our knowledge of cardiac pathology is increasing and our viewpoint changing as new facts are brought out making a

physician's opinion upon a heart case of greater value because more accurate, than in time past, but the most worthwhile advancement has been in a preventative way.

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A FEW NOTES ON INSULIN - CASE REPORTS

By R. D. ROLLER, JR., M. D.

Since 1922, when Banting introduced insulin to the medical profession, the treatment of diabetes has lost a great many of its terrors, both for the patient and his physician.

The older methods of under-nutrition with their attendant depressing effects on the patient and the danger of acidosis, coma, and surgical complications, with the helplessness of the physician, has given way to a method which gives precision for the physician in his treatment, and comfort to the patient; together with the ability to lead a practically normal life.

Insulin supplies, as we know, the lack of the internal secretion of the pancreas, which is essential for the combustion of carbohydrates. The use of insulin should be undertaken whenever the carbohydrate requirement of the patient cannot be satisfied without it. This means an accurate estimation of his caloric needs, the accurate amount of his carbohydrate, protein and fat intake, and the use of insulin daily to burn up all the carbohydrate which is in excess of the amount his own secretion can take care of.

The danger of long continued use of insulin daily is nil. The danger of insulin shock is slight, and the immediate danger of life during insulin shock is not grave. The use of orange juice or glucose by mouth is all that is necessary for the attendant hypoglycemia.

The fats cannot be utilized except in the presence of the combustion of carbohydrates, the normal fatty acids being converted into acid Ketones, where normal carbohydrate combustion is not present. The acid Ketones produce that condition known as Ketosis, or acidosis. As this becomes more marked, the patient begins to present the signs of impending coma, gradually sinking into a comatose condition.

If possible, a determination should be made as to whether the condition is pre-coma or coma, because in actual coma, for some unknown reason it is more difficult for insulin to reduce the blood sugar and much larger doses are needed in proportion to the hyperglycemia.

It has been found that as much as 400 units of insulin given within twelve hours, are needed to burn up all the sugar and relieve the acidosis in some severe cases. As much as 50 to 100 units should be the initial dose in coma and 35 units in pre-coma. Insulin should then be given every 2 or 3 hours; its administration being controlled by examination of the urine just before each dose. Catheterization may have to be resorted to during this period. Preferably, blood sugar estimations should be made instead of urine examinations if a laboratory is available.

It must not be forgotten that the Ketones have a very deleterious effect upon the heart muscles and the longer the coma lasts before insulin is given the graver danger there is of irreparable damage to the myocardium and of sudden and early cardiac death. This is very apt to be the case if coma has lasted as long as twelve hours.

There is usually a marked dehydration, and fluids must be supplied. Carbo-hydrates may have to be supplied also to give enough sugar combustion to burn up the Ketones. This additional carbohydrate, usually in the

form of glucose must be covered with additional insulin.

Therefore there are several points to be kept in mind in a case of coma.

1st. The sugar in the blood must be utilized and can only be utilized by insulin.

2nd. The Ketones have a deleterious effect on the myocardium. Therefore digitalization may have to be resorted to.

3rd. Fluid must be supplied and may be supplied in several ways. Normal saline by hypodermoclysis, 5 or 10 per cent solution of glucose, covered by enough insulin to take care of the glucose in addition to what is needed for the sugar in the blood or an eight per cent solution of sodium bicarbonate intravenously, until 20 or 30 gms. of the bicarbonate have been given. There is much controversy still raging, as to whether an alkali is of value or not.

4th. Additional carbohydrates may have to be supplied to aid in the destruction of the Ketones. This can be supplied as mentioned under giving of fluids.

It is wise in giving large amounts of insulin in coma cases where a blood sugar estimation cannot be made, to maintain a slight glycosuria. There is always a mild hyperglycemia when there is a glycosuria. In other words, the high normal blood sugar content is 120 mgms. to 100 c.c. of blood. Sugar rarely appears in the urine until there are 170 mgms. in the blood. This is called the threshold and between this and the normal content we can consider a safety zone for the administration of insulin.

A few cases have been reported of insulin shock occurring before the patient has recovered consciousness due to coma. This is rare and the danger is much less than the danger of too little insulin.

The surgical diabetic is the more serious of the two. Joslin states that from 1923 to 1926, the surgical mortality at the Deaconess hospital was 11 per cent, the medical mortality during the same period was 1.7 per cent. From coma there were only four deaths in 44 cases.

This means that the diabetic who requires surgical intervention' is a poor risk, but chiefly because he does not have the proper care before, during' and after the operation. The surgeon should not be afraid of a diabetic, but he should give him greater care and attention than he would his other cases, and take care of his carbohydrates with insulin properly used.

I quote from Joslin a few medical rules for surgical diabetes before and after operation.

1. Before operation, store glycogen in the liver of the surgical diabetic as protection against the anesthetic. Carbohydrates can be given in the form of oatmeal, water gruel, orange juice or toast and tea without milk.

2. After operation, guard against hyperglycemia with its attendant acidosis or hypoglycemia due to lack of food or excess of insulin. For the first 24 hours after operation, oatmeal, water gruel, ginger ale, thin milk are allowed ad libitum. The carbohydrate should be taken 3 hours before operation and 3 hours after operation. The patient should receive this by mouth, rectum or vein with insulin if necessary. to insure its utilization.

Insulin. If insulin has been used regularly by the patient, give the same total number of units in 24 hours at the time of operation, but divide into smaller and more frequent doses irrespective of meals. If insulin has not been employed, give it when two successive specimens contain sugar and omit when two are free.

4. If the surgical diabetic is not doing well, don't blame the diabetic!

My main point is this: Coma and impending coma is caused by acid Ketones in the blood, which can only be destroyed by the combustion of sugar. This sugar is in the blood in excessive quantities. To utilize the sugar, burn up the Ketones and prevent further acidosis and restore the blood to its normal alkalinity, insulin is used.

To prevent acidosis and all the train of symptoms of diabetes, insulin must be supplied artificially to take the place of the function of the pancreas.

Banting, MacLeod and others have shown that an advanced diabetic in coma, with his blood loaded with sugar and ketones, can often be quickly relieved by insulin, together

with sufficient fluids to stimulate kidney elimination, and enough glucose to carry on oxygenation in the tissues.

Case of Tuberculosis or Syphilis of the Spleen and Liver

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Before presenting this case, I wish to quote from Boyd's Surgical Pathology, the following on the Relation of the Liver to the Spleen:

"The relation between these two organs is becoming of increasing interest to the surgeon. The liver receives portal blood not only from the gastro-intestinal canal but also from the spleen. In health 25 per cent of the blood in the portal vein comes from the spleen, and in disease, when the spleen is enlarged, this proportion must be infinitely greater. The spleen may fail to filter out bacteria and toxins from the blood and send them on for destruction by the liver, where they may produce profound disturbance."

Bunting says in his Diseases of the Spleen: "In any dissemination of the tubercle bacilli through the blood the spleen is certain to be involved. Tuberculosis affects the spleen only less frequently than it affects the lungs and lymph glands. In a limited number of cases tuberculosis of the spleen is apparently the only demonstrable tuberculous lesion in the body. The cause of this splenic susceptibility is unknown. As regards the complications in these cases—quiescent or active tuberculosis of the lungs and tuberculosis of the liver and lymph glands are most commonly associated. As regards the pathology—the spleen usually shows numerous masses which may soften or become calcified.'

As regards syphilis of the spleen: "In the secondary stage of acquired syphilic there may be a splenic tumor. In the tertiary stage the organ may be the seat of gummata. The splenic lesions are however only rarely of clinical importance in cases of syphilis."

In view of the above I present the following case as one of tuberculosis of the spleen and liver, with no other demonstrable lesions in the body. Syphilis, with a large question mark, is mentioned only because the patient shows a strongly positive blood Wasserman. I welcome any suggestions as to the etiology of the following case.

J. F. J., white, male, age 42, occupation coal miner, entered the Charleston General hospital January 11, 1927, being referred by Dr. F. L. Erwin because of pain and tenderness in the right upper abdominal quadrant.

Family and marital history unimportant. Past history: In 1920 patient was shot by a revenue officer, the 32-calibre bullet entering the abdominal cavity by way of the right gluteal region, causing five perforations of the intestine. Following laparotomy with closure of the perforations patient had a stormy convalescence.

Denies venereal infection.

Present Illness: Began seven months ago with pain in right upper abdominal quadrant—rather severe and knife-like in character, accompanied by eructations of gas and sour material into throat. Attacks

usually lasted about two days and recurred at intervals of from two weeks to two months and seemed aggravated by heavy work. Marked chronic constipation.

Physical examination unimportant except as regards abdominal pathology as confirmed by X-ray and exploratory laparotomy.

Laboratory investigations gave a 4 plus blood Wasserman, otherwise unimportant.

Report of X-ray after injection of dye for cholecystographic follows:

"Gall bladder 20x50 m.m., the lower border ptosed to level with right transverse process of fourth lumbar vertebra, appears abnormally small. Many small calcified areas, apparently in enlarged liver and spleen, suggestive of probable acid fast involvement. One hour after ingestion of fatty meal there is no change in size or position of gall bladder. No evidence of stones."

From the above it was thought that there was some obstruction to the emptying of the gall bladder.

Exploratory laparotomy through upper right rectus incision. Liver greatly enlarged, the lower border of the right lobe being on a level with the right iliac crest; left lobe extending well over to the left, spleen moderately enlarged; very many hard nodules scattered through the liver and spleen, just beneath the surface, in size varying greatly. These nodules on inspection appeared carcinomatous, but on palpation seemed definitely stone like.

Gall bladder empties normally; cystic and common ducts, stomach and pancreas normal. No nodules or enlarged glands made out in the omentum or mesentery; extensive adhesions in lower abdomen; nodule excised from liver—attempt to section this shows it to be calcified closure. Convalescence uneventful.

In conclusion, I believe that we are here dealing with a case of healed tuberculosis of the spleen with secondary involvement of the liver; and no other demonstrable tuberculous lesion. Because of the 4 plus blood Wasserman, I have recommended to his physician, the institution of anti-leutic treatment.

Perforated Duodenal Ulcer with Obstruction of Sigmoid Flexure *

By BEN F. BRUGH, M. D.
Montgomery, W. Va.

The occurrence of perforation as a result of duodenal ulcer is frequent but the association of such perforation with intestinal obstruction is rather unusual.

Case No. 28,337, white, male, age 40, admitted to the Coal Valley hospital on November 18, 1926, referred by Dr. E. S. H., Oak Hill, West Virginia, with a diagnosis of duodenal ulcer.

For five years the patient had complained of gnawing pain in the epigastrium coming on from one to three hours after eating, relieved by food and soda. There were intermissions when the patient was free from pain and discomfort. His stools were frequently tarry. Three years ago he had severe abdominal pain followed by nausea and vomiting, abdominal rigidity and collapse. Following this the pain stabbed through to the back, severe at night, often awakening him from his sleep. Recently his pain has been constant: no relief of pain by food or soda.

His general physical examination was negative save for the following: His fundal vessels showed slight tortuosity; his gums were retracted; his epigastrium was tender and the recti muscles rigid; the radial and brachial arteries were tortuous; blood pressure 154 systolic, 114 diastolic. Urinalysis on admission was negative. The cellular constituents of his blood were normal. His gastric analysis showed HCL 70 c.c. per cent; combined 18 c.c. per cent; total 104 cc. per cent; slight trace of blood. The chemical constituents were normal; urea nitrogen 13.4 mg. per 100 c.c.; non-protein nitrogen 27.4 mg. per cc. Hemoclastic of Widal was negative. Urobilin positive (++). Icterus index 7. Two days after admission there was moderate pain, occasional waves of nausea but no vomiting. His plasma NaCL was 495 mg. per cent. CO^2 combining power of blood plasma 69.2 cc. per cent. X-ray of his alimentary tract showed a filling defect of the duodenal cap with marked pyloric stenosis; barium reten-

* From the Coal Valley Hospital.

tion at the end of 24 hours. Eighteen hours following X-ray of the alimentary he had sudden pain in the epigastrium with collapse, nausea, vomiting; abdomen tender and rigid; leukocyte count of 20,000 with 83 per cent polys.

Under nitrous oxid oxygen analgesia plus regional anesthesia his abdomen was opened through the oblique incision of Kocher. A perforated duodenal ulcer was found and Morrison's pouch was filled with duodenal contents and barium. Morrison's pouch was cleansed, the perforation closed and an omental tag sutured over the perforation. A rapid gastro-enterostomy was done. The transverse and descending colon were so much dilated that it was impossible to keep them in the abdomen. Following the gastro-enterostomy the hand was passed to the sigmoid flexure of the colon. A strong band of adhesions was found which had become organic and firm. The band of adhesions was cut and a tag of omentum sutured between the cut ends. Immediately after the dissevrence of the band of adhesions the distended colon returned to normal. During the operation the patient was given 620 cc. of normal NaCl solution, 38° C. by continuous intra-peritoneal drip. He was given a massive dose of 500 cc. of normal saline intra-peritoneally, and his abdomen closed without drainage.

With the pyloric stenosis, sigmoid obstruction, and the resulting plasma chloride depletion it was thought advisable to give large amounts of sodium chloride during the immediate post-operative course. This was given in the form of normal saline by hypodermoclysis. At the end of 48 hours his urine contained a cloud of albumin, many granular casts and there was a retention of blood nitrogen as shown by a urea nitrogen of 70 mg. per 100 cc. and a non-protein nitrogen of 93 mg. per 100 cc. Large amounts of glucose were given intravenously. At the end of the first week of the post-operative course there was a trace of albumin and a few granular casts in his urine; a retention of NaCl of 657.2; CO^2 combining power of the blood plasma 63.6; urea nitrogen 43 mg. per 100 cc.; non-protein nitrogen 56.8 mg. per 100 cc. Saline was discontinued, sterile tap water forced by hypodermoclysis. His urine gradually cleared up and his blood chemistry returned to normal. He was discharged from the hospital nineteen days after operation. To date he is free from symptoms.

SUMMARY

The value of the knowledge of the patient's chemistry is illustrated. Cases with pyloric stenosis should be carefully investigated from the standpoint of alkalosis. If there is an alkalosis large amounts of NaCl solution should not be given without frequent blood chemical analyses. This is especially true in patients with premature senility, hypertension, hardening of the vessels, etc.

The symptoms in this case were so typical of duodenal ulcer that the diagnostic study added little to the history and physical examination. Gastric analysis and X-ray of the alimentary tract were probably contraindicated and no doubt were responsible for the patient's perforation while under observation in the hospital.

The value of a complete abdominal exploratory, regardless of how clear cut the symptoms may be, is illustrated. Suture of the perforation plus gastro-enterostomy would have been of no avail in this case if the sigmoid obstruction from peritonitic adhesions had been overlooked.

Atherosclerosis *

By WILLIAM R. LAIRD, M. D., *and*
MILTON C. BORMAN, M. D.
Montgomery, W. Va.

* From the Coal Valley Hospital, Montgomery, W. Va.

Mr. J. S. S., a white male 49 years old, was admitted to the Coal Valley hospital, Montgomery, West Virginia, February 3, 1927, with the chief complaint of sore foot. With the onset of cold weather four months before, his right foot felt cold when he wore his shoes. This alternated with periods of normal sensation. About one month before admission the coldness involved the lower right calf. Massage, advised by a physician, seemed to produce some improvement. Extremes in temperature produced excruciating pain. One week before admission he cut his nails too short, thereby infecting the

soft tissues of the great and fourth toes which was followed by periods of excruciating pain which nothing, including morphine sulphate, seemed to relieve. Three days before admission, upon the advice of a physician, he had eight teeth extracted.

Patient drank to excess before prohibition. He chewed half a plug of tobacco daily, and smoked an occasional cigar. There was no venereal history. A paternal aunt had died of cancer.

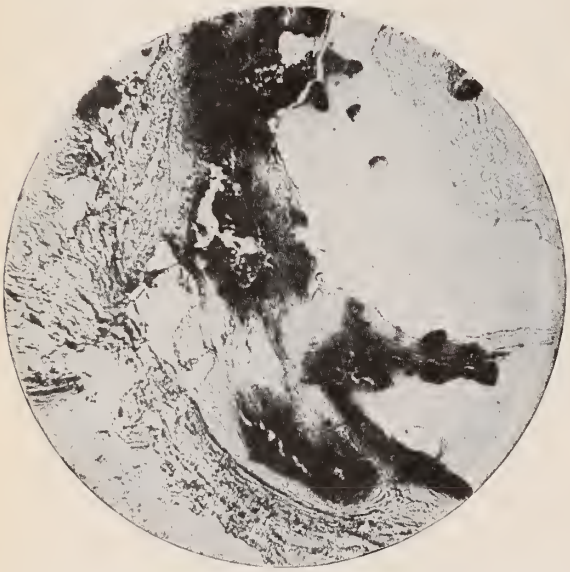

FIG. 1—The irregular black patcres are areas of calcification of the media and intima of the posterior tibial artery. (Stain H. & E. Mag. 92x.)

On admission patient was writhing in pain. He looked older than his actual age. The peripheral vessels were tortuous and beaded. There were several carious teeth with retracted infected gums. The tonsils appeared diseased. His blood pressure was 144/90. Mild paronychia were observed at the bases of the right great and fourth toe nails with suggestive early gangrene of the adjacent tissues. The terminal portion of the right foot alternated in appearance, independent of posture, from cyanosis to blanching, pain being most pronounced during the latter. The pulsations of the dorsalis pedis and posterior popliteal arteries were not palpable on the right but were present on the left. Both femoral pulsations were present. There was an absence of induced rubor and ischemia on the left side. Laboratory examination revealed two normal blood counts, normal blood sugar, urea, non-protein nitrogen, uric acid, two basal metabolism rates of plus 37.4 per cent and plus 35.1 percent, respectively, and negative blood Wasserman and Meincke tests.

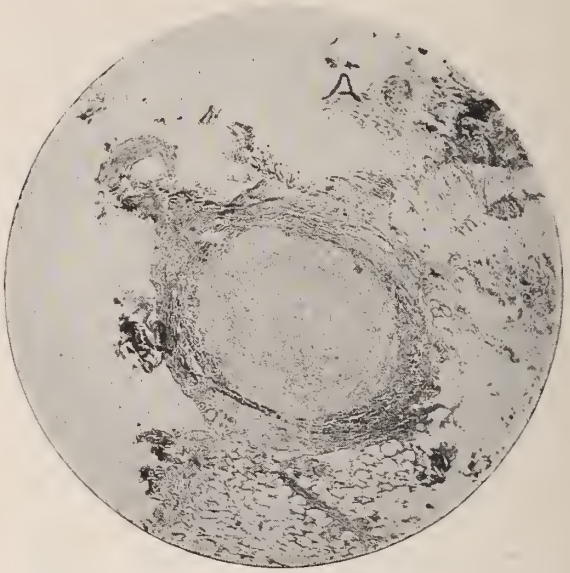

FIG. 2—The lumen of the artery is completely occluded by a white partially-organized thrombus. (Stain H. & E. Mag. 92x.)

Course in the Hospital

Although the periods of blanching and cyanosis continued independent of posture, the other signs persuaded us, on the tenth day after admission, to make a diagnosis of

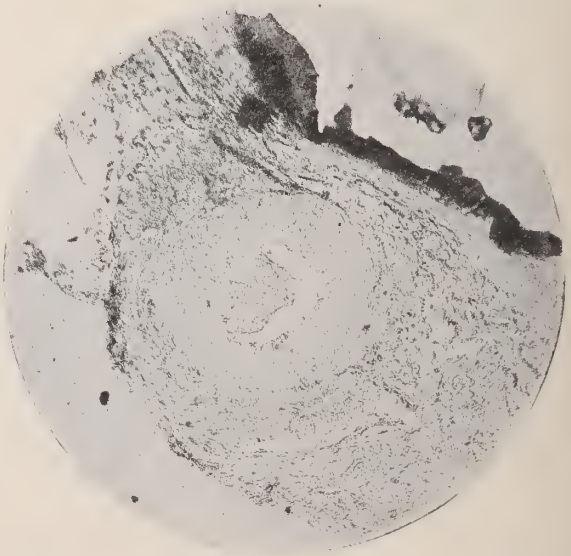

FIG 3—The lumen of the vaso-vasorum is partially occluded by endothelial hyperplasia. This vessel is lying in the adventitia of a larger vessel, the intima and media of which is largely replaced by calfication as noted by the blackly stained margin below.

an intravascular lesion. On the eleventh day a consultant gave his opinion as Raynaud's disease with an associated organic lesion. On the twentieth day another consultant gave his diagnosis as vascular obstruction due to atheroma. On the twenty-first day amputation in the middle third of the right thigh was performed. Gross pathological examination of the amputated limb revealed athero-sclerosis with occlusion of the popliteal and posterior tibial arteries, and terminal gangrene of the right great, second and fourth toes. Histological examination revealed extensive areas of calcification in the media and intima of the great vessels (Fig. 1), with a white recently-organized thrombus (Fig. 2) in the right posterior popliteal artery. The smaller vessels showed a marked end-arteritis obliterans (Fig. 3). The soft tissues of the great and fourth toes were necrotic.

DISCUSSION

In a patient complaining of coldness in the extremities, consideration of a serious vascular or neurological disturbance is imperative and careful study is demanded because of the possible damage which may result from improper treatment. It is quite possible that patient's early complaint of coldness was due to partial obstruction and that the massage precipitated the graver complete occlusion. What was the role of the infected teeth, or alcohol, or both, in the production of the premature athero-sclerosis? What part did the paroynchia play in the final outcome? The need of observation in this type of case over a definite length of time is demonstrated. Treatment may be so radically different that it is necessary to establish a certain diagnosis which may be difficult in the early stages of the disease because of the confusing picture sometimes presented.

Acidosis Due to Ptomaine Poisoning

By M. GADOSH, M. D.
Wheeling, W. Va.

Mrs. E. Kolesar, age 26, weighing about 180 pounds, mother of one baby. Nov. 24, 1926, she ate some sausages and baked beans for supper. That night she felt chilly, heavy feeling in the stomach followed by cramps, vomiting and diarrhea. After bowels were empty, the diarrhea became less and less but vomiting persisted for nine days as nothing would stay in the stomach, not even water.

About this time the writer was called to see the case as her five other physicians did not give her any relief. I found this woman in bed apparently desperately sick. She refused to talk to anybody, would lie in one position for hours, on account of extreme weakness. The pulse very slow, temperature subnormal, with slow moaning and sighing respiration. She was air hungry and requested her attendants to open the window and to push her bed to it.

Her lips and mouth were beefy red, throat dry and burning. The rectum, anus and the surrounding structure red and also burning and bleeding form the bowels whenever bowels would move. Her body was covered with the bright red confluent rash all over the body; in places it looked like scarlet fever rash, in others like that of urticaria, and still in others like erysipelas, with sharply defined borders. There were small punctate spots over the reddened area and the surface felt rough to touch.

The writer made diagnosis as that of acidosis due to ptomaine poisoning and to diarrhea and persistent vomiting. The most important thing in this case was to get the stomach desensitized so that she would take some fluids and other indicated remedies by mouth. For this she was given cocain hydrochloride 1-8 grain in combination with elix. luminal and liq. peptenzyme. This combination was given at frequent intervals; at first, every half hour, later on, every 2 hours to effect.

To alkalanize the blood, tribasic citrocarbonate was given, teaspoonful every 4 hours. In addition to this, Angiers emulsion in tablespoon doses, four times a day was given with very happy results. This patient made very quick recovery under above treatment.

*Wheeling Hospital.

A Case of Typhoid Fever Complicated by Malaria

By W. P. BITTINGER, M. D.
Richwood, W. Va.

Called to see the patient November 6, 1926, at 2 a. m. Found a man 25 years of age, married, complaining of very severe pain in the lumbar region of his back. Temperature 104, pulse 90. Physical examination negative. The pain in his back was not relieved by acetanilid, hot water bottles, violet ray, and he was given a hypodermic of morphine which relieved it somewhat, but he continued to have pain in his back and was brought to the hospital November 7. Twelve days before he was taken sick, he had the first injection of typhoid fever vaccine, and a week later the second injection. He was inoculated against typhoid because of the epidemic at his home.

On admittance to the hospital his temperature was 104, pulse 110, complaining of great pain in his back, blood count 7000.

On account of the history, symptoms, signs, and blood count, diagnosis was made of typhoid fever, and he was put on the regular typhoid treatment, hydrochloric acid, salol, and soft diet, with hydrotherapy. He ran a typical course of typhoid fever, his temperature gradually becoming lower until it was normal November 30, twenty-four days after he was taken sick.

Patient was convalescing very well until December 10. On that date he had a very hard chill which lasted about two hours, vomited, and temperature went to 102, pulse from 88 to 120. After having chill he had what might be called the hot stage when the skin became very much flushed and he complained of great headache. On the next day he still had some temperature but was feeling better and did not have any more temperature until December 16, when he had another chill which lasted an hour, temperature 101.4, pulse 120, the chill again followed by a hot stage and by sweating. His blood count was 6800, which in a way ruled out such complications as pleurisy, pneumonia, otitis media, phlebitis, or any septic condition. December 21 he again had a temperature of 103, a chill which lasted two hours similar to the previous paroxysm. December 22 patient was given hypodermic of adrenalin chloride, 10 drops. In thirty minutes he had a chill, and the blood was examined for malaria, which was found of the Tertian variety. The slides were examined and confirmed by three doctors. He was immediately put on quinine sulphate, grs. 6, every four hours; had no more chills, and his temperature was never above 99.4 after the quinine, began immediately to improve, and left the hospital January 7, in good condition.

Patient had had pulmonary tuberculosis in 1925, and was sent to New Mexico. He stayed until 1926. During this time he was down in the Pecos valley of New Mexico, which he says was very swampy, and the probabilities are that he obtained malaria at this time and it did not show up until he came to a higher altitude and was weakened by the attack of typhoid fever. He gained 20 pounds while away, and the tuberculosis was pronounced cured on his return.

This case is reported because of the difficulty in diagnosis. We were looking for some complication of typhoid fever, or a return of the tuberculosis, when in reality he was suffering with another distinct disease—malaria.

It is interesting also to note that all three of these diseases give a normal or low blood count.

* McClung Hospital.

A Case of Puerperal Sepsis Presenting Symptoms of Suprarenal Insufficiency and Tetany

By WALTER D. SIMMONS, M. D.
Slab Fork, W. Va.

Addison's disease is defined as a disease, usually progressive and fatal, characterized by a bronze-like pigmentation of the skin, severe prostration, and progressive nemia, low blood pressure, diarrhea, and digestive disturbance; and is due to disease (hypofunction) of the suprarenal glands.

In most cases of Addison's disease coming to autopsy, tuberculosis of the suprarenals was found; in others, neoplasm, syphilis, or atrophy was responsible. Cases have been reported where no anatomical lesion of the suprarenal glands have been found and a

purely functional disturbance had to be assumed. Acute inflammation of the suprarenal glands may occur from metastic infection with any of the pyogenic bacteria, and toxic degeneration may result from any general toxic process. Thus, suprarenal insufficiency has been observed in typhoid fever, meningitis, septicemia, cholera, malaria, etc. Under chronic inflammation of the suprarenals, are usually included those cases due to tuberculosis and to syphilis. Addison's syndrome is usually present in chronic suprarenalitis with cirrhosis. Suprarenal insufficiency has been seen many times in soldiers suffering from shock or from the strains of war, or convalescent from disease, infections, or wounds; these cases often presenting all the symptoms of Addison's disease but recovering promptly and completely when given epinephrin. In Rowntree's report of forty-seven cases of Addison's disease, seven of which are known to be living, twenty-seven cases gave a history of having had influenza, and twelve cases gave a history of pneumonia; and in only eight cases was there direct or indirect evidence of tuberculosis, though all but one case coming to autopsy showed tuberculosis of the suprarenals. In two of his cases the symptoms first appeared during pregnancy. According to Fitzpatrick, pregnancy does not seem of itself to predispose to Addison's disease in a patient whose suprarenals are normal, but where there is already existing some alteration in the glands, pregnancy acts as a stimulus to render a latent Addison's disease manifest; or at least effects the faulty functioning of the glands at a time when they are expected to do even extra work. Turemre reported suprarenal insufficiency in a primipara who progressed to normal delivery under continued epinephrin treatment, the woman dying in a final attack of suprarenal insufficiency evidently due to the strain of lactation.

Symptomatology: Briefly, the symptoms of suprarenal insufficiency are fatigability, muscular weakness, and disinclination for exertion. Insomnia may alternate with periods of great drownsiness. Loss of weight is usually considerable. There is low blood pressure and often hypo-thermia. A condition resembling shock is often observed. Digestive disturbances, such as abdominal pain and tenderness, meteorism, nausea, vomiting, constipation or diarrhea, are usually present. Pigmentation usually comes on gradually, and the skin assumes a dirty yellow tint, often gradually changing to a deep black. A vasomotor phenomenon known as "Sergeant's suprarenal white line" is present.

According to Wright, "Sergeant's white line," hypotension, and asthenia are not pathognomonic of suprarenal insufficiency.

Asthenia, pigmentation, and hypotension, were taken by Rowntree as the criteria in making the diagnosis of Addison's disease. In the cases reported by him, loss of weight was marked. The average systolic pressure was 90, diastolic 64. A considerable number of patients complained of vague, dull, deep, aching pain in epigastrium, lumbar region or flanks. Amenia was infrequent, and digestive disturbances were common.

I will now discuss briefly the symptomatology and the theories regarding the cause of tetany.

Tetany is a condition of hyperirritability of the nervous system, characterized by painful, intermittent or constant tonic spasms, usually symmetrical and affecting the extremities. Only the flexor group of muscles are implicated. Tetany may be latent or active. Tetany is often associated with conditions apparently unrelated, as rickets, dilatation of the stomach, and removal of the parathyroid glands.

There are three main theories regarding the pathogenesis of tetany: the parathyroid theory, the calcium privation theory, and the theory of toxic origin. Extirpation of the parathyroids in dogs promptly produces the manifestations of tetany, whereas in other animals, for example sheep, the symptoms may be delayed or latent. Intravenous administration of calcium in these cases relieved the condition. Berman in a review of twenty cases of chronic parathyroid insufficiency notes hypoplasia or defects in the enamel of the teeth, and diminished calcium and high phosphate content in the blood.

The role of the calcium metabolism probably lies in the neutralization of circulating toxins either by direct combination to form innocuous substances, or by rendering the tissues less permeable. The present suggestion is that the precipitating cause of all types of tetany is an alteration in nitrogen metabolism, leading to the appearance in the blood-stream of highly toxic substances, and these toxic substances are probably guanidin or some of its derivatives.

Tetany is diagnosed by the intermittent attacks of tonic contractions in definite muscular domains, giving the well-known attitudes (obstetrical hand, carpopedal spasm), and their association with marked increase of the mechanical and of the electrical excitability of the motor nerves. There may be elevation of temperature, and there is usually mental excitement and hyperpnea.

Report of Case: Mrs. C. B., white, aged 21 years, gave birth to her third child on January 3, 1926. She had gone through her two previous pregnancies with no untoward symptoms. Delivery at this time was normal. Her past history was unimportant. She had influenza in 1918. The patient was well nourished and had always been healthy. For two months before delivery patient had complained of weakness and dull, aching pain in epigastrium, back, and flanks. Six days postpartum she began to have headache, elevation of temperature, and pain in lower abdomen, especially in the right side. For about five weeks she ran a typical course of puerperal sepsis with abdominal distension, uterine discharge, and septic temperature. During the third week of her illness she developed a low-grade phlebitis in the right leg. She was treated symptomatically and kept in Fowler's position. Five days before her temperature returned to normal she was given 40 cc. of antistreptococcic serum. Her temperature had been subnormal for about 8 days when she had an attack resembling tetany. During the attack she presented mental excitement, hyperpnea, obstetrical hand, and carpopedal spasm. After the attack of tetany she had temperature of 100 to 100.5 for three days, she was extremely nervous, and slept very little for four or five days. Patient had been taking an elixir of phosphates for ten days previous to attack. About this time Patient continued to complain of pain in right flank, and pigmentation began to appear on abdomen. She now had subnormal temperature, 96.5 to 97.5, and blood pressure averaged about 90 systolic. She had a second attack of tetany two weeks after the first attack, and had a temperature of about 100 for several days. The attacks were promptly relieved by morphine, and since the first attack she had been taking calcium lactate 30 gr. t.i.d. in capsules. Patient continued to omplain of pain in flanks, she had abdominal distension and constipation, subnormal temperature, asthenia, blood pressure averaged 90 systolic, and "Sergeant's white line" was easily demonstrated. Bronzing of abdomen became darker, and in about three weeks had appeared on chest, behind the ears, around mouth, and on arms. Pigmentation assumed a dirty-brown color. Shortly after the second attack of tetany patient was given ext. suprarenal gland 5 gr. t.i.d. in addition to calcium lactate. A third attack of tetany occurred three weeks after the second attack; with temperature of about 99.5 for three days. Bronzing began to fade after two weeks of suprarenal treatment, but hypotension and asthenia continued for several weeks. Pigmentation did not disappear until about April 15, 1926. She had pigmentation for six or seven weeks. She was kept on suprarenal extract until July 1, and blood pressure had returned to 110 systolic by July 15. Patient was not given epinephrin at any time. No blood examinations were made on this case. Urinalysis showed a trace of albumin and no sugar upon sexeral examinations.

DISCUSSION

This case is interesting for two reasons. It presented the cardinal symptoms of Addison's disease (pigmentation, asthenia, hypotension), relieved by suprarenal extract, but not relapsing to date (April, 1927). Secondly, it presented symptoms of active tetany, including carpopedal spasm, obstetrical hand, hyperpnea, mental excitement, slight elevation of temperature, and Chevostek's phenomenon in all three attacks. No test

was made for Erb's phenomenon, and the Trousseau phenomenon was absent. It may be well to remember that the patient had been taking phosphates before the first attack. I would only differentiate in this case between tetany and hysteria.

I conclude that there developed from this case of puerperal sepsis a temporary hypofunction of the suprarenal glands and a condition of active tetany.

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Vitamin Content of Human Milk

Few foods, if any have received more detailed consideration with respect to their chemical composition and nutritive possibilities than has milk. The variations in the proportions of the familiar constituents in the mammary secretion of different species and breeds, and likewise the alimentary behavior of milk nutriments, have been noted expounded and exploited until they have become a part of the popular knowledge of nutrition. The propaganda for milk has made every school child familiar with its values and virtues. There are, however, certain important properties of milk that have not yet been subjected to the rigorous quantitative interpretations that are currently applied to its protein and fat. The vitamins are not yet so readily evaluated in convenient units like pints and calories. Such information as has been accumulated with respect to the A, B and C factors, and more recently the vitamins D and E, has been derived from cow's milk. Knowledge of the vitamin content of human milk, the "prototype of the perfect food," has heretofore been restricted to a few fragmentary observations. It is known that diet influences markedly the vitamin content of the milk of the dairy cow. Almost nothing is recorded about the comparable variations of the human product.

Part of the gaps in such information have lately been filled by a series of excellent studies from the Nutrition Research Laboratories of the Merril-Palmer School and the Children's Hospital of Michigan, in Detroit.[1]

The experiments of Dr. Macy and her associates there show that milk from women on the average American dietary is apparently a relatively rich source of vitamin A. Further evidence of the potency of breast milk is illustrated in the children's clinics, where xerophthalmia due to deficiency in vitamin A is rarely, if ever, observed in nursing infants.

On the other hand, the Detroit observations indicate that the antineuritic potency of mixed human milk, at least from a group of women receiving the average American dietary, is slight. It should be recalled that animal organisms are apparently unable to synthesize vitamin B. In view of these facts, Macy believes it possible that many mothers do not supply enough of vitamin B to their babies. At the best, the average healthy mother is producing a milk that is exceedingly low in vitamin B, and for the economy of the mother's nutrition and to safeguard her offspring, food materials rich in this important food component should form a prominent part in the diet of pregnant and lactating women. Food substances rich in vitamins should be introduced early in the nursing period of the infant, whether breast fed or artifically fed.

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R. A. Ireland, Charleston; G. A. McQueen, Charleston; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg; D. A. MacGregor, Wheeling.

Committee on Medical Education

W. T. Henshaw, Charleston, chairman; John N. Simpson, Morgantown; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (2-year term); H. R. Johnson, Fairmont, (1-year term); A. G. Rutherford, Welch, (3-year term); W. R. Goff, Parkersburg, (4-year term); Hugh G. Nicholson, Charleston, (5-year term).

Workman's Compensation Committee

V. T. Churchman, Sr., Charleston, chairman; W. A. McMillan and R. H. Walker, Charleston, members.

Surgical Section

D. M. Aikman, Wheeling, chairman; R. K. Buford, Charleston, secretary.

Eye, Ear, Nose and Throat Section

C. B. Wylie, Morgantown, chairman; G. K. Nutting, Hinton, secretary.

Hospital Association Officers

H. F. Spillers, Wheeling, president; Sister Xavier, Wheeling, first vice-president; L. W. Lawson, Logan, second vice-president; R. A. Ireland, Charleston, treasurer; Miss Greta Payne, Charleston, executive secretary.

EDITORIAL

Relation of Public Health Service to Practicing Physicians

The medical profession in general, of this state appears to have a misunderstanding of the relation between a public health official and the practicing physician. Many physicians have a false conception of the qualifications and duties of a health officer—or the benefits derived from a well rounded health program. Public health service, or preventive medicine is now a recognized specialty. A director in this service necessarily has to specialize.

It is inconsistent for a health officer to practice curative medicine and he should not be expected to do so under any circumstances, because his specialty is "preventive." In order to prevent one must know the cause, mode of communication and method of control of each communicable disease. This requires constant study, and regular attendance at meetings of physicians and sanitariums, where the latest methods are demonstrated and discussed. Great progress has been made along these lines within the last few years. Physicians readily accept new ideas in surgery and new methods in treating disease, both of which are highly commendable. Why cling so tenaciously to the old way of communicable disease control that has proven so unsatisfactory?

Public health service is divided into two general subjects, viz.: corrective and educational. Examinations are made of the apparently well in order to discover, remediable defects, and insist upon having them corrected before it is too late. All cases are referred to physicians for treatment and corrections. People are educated in the science of hygiene; how to preserve and promote health and the necessity of consulting a physician in time, when they do receive an injury or contract a disease.

The method of artificially immunizing children against smallpox, diphtheria and typhoid fever is a preventive measure performed by health officials, as a demonstration, to educate the public because it has to be done by the public health service when one of these diseases becomes epidemic. The only disease treated is venereal, which practice was instituted by the government as a war measure to prevent the spread of venereal disease among soldiers and sailors.

We fail to see any reason for discussing the subject, "How far should a health officer go in treating cases without infringing on practice, when he doesn't treat cases at all?" The Public Health Service has been separated from the Veteran's Bureau, and should not practice curative medicine in any way.

It seems so unreasonable to say that public health practice is leading toward "state medicine" when health officers do not practice medicine at all. Of course this applies to full-time health officers only, and it must be understood that county or city physicians appointed to care for the "poor" sick and injured are not included.

When physicians understand the policy of a public health program, they will see that it requires an exceptionally trained officer to direct it, and that it is helpful to the physician for it relieves him of much hard unnecessary work and does not curtail his income in the least.

JOHN THAMES, M. D.

Present Status of Medical Education in West Virginia

The Association of American Medical Colleges has as its requirements two years of college work, mostly in the sciences, chemistry, biology and physics, along with a year of English, and suggests as electives, a modern foreign and psychology.

All the tax supported universities have this minimum requirement, but there is an increasing number of the four-year endowed schools that require three years, and a few require a bachelor's degree. Ten years ago students offering degrees were very few. Now there are a great many. We have had

as many as 20 per cent of a class with such preparation.

Last year it was brought out at the annual meeting of the association that after a careful study of all the students applying for admission to the freshman class, and after each school had taken its maximum, there were 2000 qualified students who failed to get an acceptance. We had 640 applications and accepted 62. With these facts in mind, the enormous increase in the number of students and their greater and better preparation, the problem of the survival of the two-year school becomes alarming. There are now ten of these schools, with an enrollment of 635 students. We had the largest enrollment, 117 in 1926-27.

Each of these schools is dependent upon the failures which occur in the your-year schools to afford vacancies which in turn are filled by students who have completed the two-year course. The better prepared students, selected from a large number of applicants, result in fewer failures and fewer vacancies to be filled by the students from the two-year schools, and they are turning out more students than ever before. Their only recourse is to go upon a four-year basis or find themselves eliminated in the next few years.

Our problem has never been a failure to locate a student because of poor preparation, but because there were no vacancies. Wherever we have had students in the past, others are welcomed. We have had students in practically all the schools east of the Mississippi river.

We were unsuccessful in our effort to get a hospital, which would have enabled us to have a complete medical course, because the legislature was unwilling to provide the money to build it.

Since it has become almost universal for the graduate to take an internship, we find that fewer of our students are returning to our state to practice and it is often the better prepared men who locate in the states where they finish or do their internships. In a list of physicians sent out by the West Virginia State Department of Health, I find less than 85 men who have taken work at the West Virginia University, whereas in that time we have had at least 600 students since 1902, when the school was founded. Our percentage is only 5 per cent, where it should be 20 per cent.

Whenever we get a full four-year course, properly equipped, it will act as a great stimulus for better medicine. The hospitals will strive to equal the state hospitals in their equipment, personnel of their staff and their training school for nurses. The individual physician will have an urge to improve himself in order to feel that he is able to compare with the best.

The hospitals will be ranked class A and our graduates will remain in the state for their internship and West Virginia will receive ample return for the money spent for medical education.

To those who doubt our ability to have a complete course, let them consider the success of the University of Michigan, with the largest medical school in the United States, having had a 1100 bed hospital, full all the time, in a residential city, less than Morgantown with its suburbs, located in the midst of one of the best manufacturing regions in the state. Likewise Iowa and Virginia have excellent schools in towns of 10,000, and in rural communities.

Can any red-blooded West Virginian help hanging his head in shame, when one of our own profession says, "What they have done we can't do."

DEAN JOHN N. SIMPSON, M. D.

The Convention

The Sixtieth Annual Meeting of the West Virginia State Medical Association, held at White Sulphur Springs on June 21-23 inclusive, has already been written into the history of the state society. This past convention was a fitting tribute to the past presidents of the association.

That the meeting was a marked success has been the almost unanimous opinion of every member who was in attendance. And in spite of the fact that White Sulphur Springs is comparatively isolated in the heart of the Appalachian range, there was a total regisration of 271 over and above some 90 members of the Woman's Auxiliary.

To the untiring efforts of the committee on scientific work, the committee on entertainment, the heads of the sections on internal medicine, surgery and eye, ear, nose and throat, and to Dr. C. R. Ogden, the president of the state association, may be attributed a large share of the glory of the sixtieth annual session. Without the splendid effort and cooperation of these executives and committees, the White Sulphur gathering would have fallen far short of the efficiency standard maintained on June 21-23.

Due to the colossal task of transcribing the minutes of the many meetings and sessions of the sixtieth annual convention, a complete record of the gathering will not be printed until the August number of *The Journal.* Until this record appears, however, let it be said that the scientific program was exceptionally brilliant, that the meetings of the council and house of delegates were well attended and efficient, and that an enormous lot of business was transacted for the betterment of the West Virginia State Medical Association.

C. A. R.

New Advertisers

The West Virginia Medical Journal is pleased to welcome into its July issue four new advertisers who have taken advantage of contract rates ranging from six to 12 months. These advertisers are the Tucker Sanatorium of Richmond, Va., Dr. Scherer's Sanatarium of Martinsville, Ind., the E. S. DePuy Splint Company of Warsaw, Ind., and the Charleston Protein Laboratory conducted by Dr. A. Eugene Hardy in connection with the Charleston Milling and Produce company of Charleston, W. Va.

REPORTS FROM COMPONENT SOCIETIES

Mercer County

The Mercer County Medical Society held its regular monthly meeting in Dr. J. R. Vermillion's office at Princeton, at 8 o'clock on the evening of May 19.

While waiting for some of the members to come in, the secretary read over the important part of the program of the state medical association, which was held at White Sulphur Springs, June 21, 22 and 23.

Dr. Mastin not being present, the secretary called the meeting to order, and Dr. Sam Holroyd was elected temporary chairman for the evening.

No clinical cases being reported, Dr. Carl Smith of Princeton, read an interesting, instructive and practical paper on his own experience of reduction of fractures, along with a number of X-ray films shown, as follows:

First, a fracture of the radius; second, two metacarpal bones fractured and tied together with catgut, with not such good results; third, a fracture of the clavicle, held together by silver wire. The silver wire was shown very plainly. Fourth, a fracture of the humerus of a child with the musculospiral nerve pinched. This was operated on later. Fifth, a fracture of the tibia without a fracture of the fibula, with bone plates on the tibia, and very good results obtained. Sixth, a fracture of the tibia and fibula with bone plates put on, obtaining good results. Seventh, a case where plates had been taken off by a colored patient by removing the screws with a pocket knife. Eighth, an overlapping of a fracture of the femur, and bone plates were used. Ninth, a fracture of the femur, tibia, and fibula in the same leg, with some displacement shown in two of the bones. Then he showed a later view of the femur.

Under discussion, Dr. C. J. Reynolds said that Dr. Smith was getting excellent results with his bone work. He said that we should bear in mind the possibility of a suit and it is not good to show your plates to the patients, especially, to the foreigners.

Dr. W. H. Wallingford complimented Dr. Smith very highly on his paper. He said, "Sometimes I think it a very good thing for us not to take an X-ray picture at all of

a fracture. No doubt, occasionally we would be better off." He related a case of a man 76 years of age, who was under his care with a fracture of the tibia and fibula and who was ten weeks in a cast. This man went home with a bad case of non-union. He went home without an open operation, but finally got a good union at home. He spoke of a fracture of an arm, with which they did the best they could, by putting it in splints, and got very good results. He said the Buck's extension is a very good remedy but he thought the open method was better.

The secretary in discussing the paper, congratulated Dr. Smith on giving such an excellent paper on his own experience in fractures. He spoke of Dr. Lane's method in the application of silver plates, as he had seen Dr. Lane apply these plates in fractures at Cook County hospital in 1907.

Dr. Sam Holroyd said: "It is a very good idea to have a witness present when you tell a patient at the time of the reduction of a fracture, that it is not a very satisfactory result, and that you would advise him to have an X-ray plate made. Some low-bred Americans try to make out something of our mistakes, and these are usually the ones we don't get anything out of, but they are the people who oftentimes give us trouble. Don't fail to tell them you may not get a very good result, in the presence of another fellow. Some parents are glad to have a child with a crooked fracture if they think there is any chance for them to get a few hundred dollars from a surgeon."

In closing the discussion, Dr. Smith said the Lane's technique is impossible for the general surgeon to do. He said: "Bone plates made of ox bone, and screws, are supposed to be absorbed. I don't think they are absorbable. Occasionally, we get a good result with one to one and one-half inch shortening, and then the patient develops a scoliosis, and goes to the Mayo hospital or Johns Hopkins hospital to have this corrected."

Next on the program was Dr. W. E. Dickerson, who read an interesting paper, and gave some valuable information on the diagnosis and treatment of a rare disease, fusospirillosis of the oropharynx.

Under discussion, Dr. Ben Bird said that this was rather a new thing for old doctors, and that he could not add anything to the paper, but that he had seen the patient that Dr. Dickerson spoke of.

Dr. Wallingford asked Dr. Dickerson if he had examined this patient's urine. He said that he gave these patients arsphenamine intravenously, and allowed them to use potassium permanganate solution locally.

Dr. Reynolds said this was an interesting paper, and he compared this malady with trench mouth. He said that oftentimes a chancroid will get well in spite of the treatment but this is not the case in trench mouth. He said he had treated some of these cases with asphenamine intravenously, and locally as a gargle, but could not see that he got any benefit from that. He said he remembered of a colored patient he had had, where the tongue was swollen and considerably protruded. He emptied the contents of a tube of neoarsphenamine in a glass of water and allowed him to gargle twice a day. He said the patient got along fine.

Dr. Harry Haggart reported a recent case of a vague pulmonary Vincent's infection. He said: "The teeth are nearly always the starting point of these cases. He spoke of a case where he had seen an army officer who had forty cases in one barracks. He gave them arsphenamine and got good results.

Dr. Dickerson, in closing the discussion, said that the conditions he spoke of in his paper were caused by Vincent's bacillus infection. He said there was no albumin found in the urine in the specimen of the patient he mentioned in his paper.

Dr. J. R. Vermillion reported an interesting case of nose bleed. Under discussion, Dr. Carl Smith didn't have anything to say in regard to this case, which he had seen with Dr. Vermillion. Dr. Haggart said this certainly was a very difficult case of nose bleed coming from an ulcer of the septum.

Dr. H. G. Steele made a talk on the state meeting at White Sulphur Springs. He gave a brief outline of what an interesting

and instructive program he hoped would be rendered at the meeting, and tried to persuade a great many of the members to attend. Dr. Holroyd also spoke on the coming state convention. H. G. STEELE, *Secretary.*

B-R-T Meeting

The Barbour-Randolph-Tucker County Medical society met in the Geneva hotel, Philippi, at 6:30 o'clock on the evening of May 26. The meeting proper followed supper at the hotel. Dr. C. R. Ogden of Clarksburg, president of the state association, was among the visitors in attendance.

Dr. E. R. McIntosh read an interesting paper on "Mental Healing" in which he gave the history of the former theories as well as the present status of theories and cults. He noted especially the present standing of the organization commonly known as Christian Scientists.

Dr. Ogden was introduced to the society and read an excellent and instructive paper which was not mentioned by title, but in which he stressed the value of organization and cooperation. He set forth that no profession had made any more rapid and continued advances than had the medical profession and urged that the members of the state association stand by their societies. Dr. Ogden pointed out that the time had come when not to be associated in society organization work would prove a handicap.

During the business session, the advisability of changing the name of the B-R-T society to the "Tygarts Valley" was discussed but no definite action was taken. The feasibility of adding to the strength of the society and stimulating interest by inviting Pocahontas county to join the B-R-T component society was also discussed, together with the prospect of affiliating with the medical societies of Harrison, Marion and Monongalia counties in their annual meetings.

Under suspension of rules, Dr. W. E. Whiteside of Parsons was elected to membership. The next meeting will be held in Parsons in July with Doctors Whiteside and Miller in charge of arrangements.

Ohio County

The closing session of the Ohio County Medical society, held at the Fort Henry Club in Wheeling on May 27, 1927, was marked by several important features, the first being the presence of the distinguished surgeon, Dr. John B. Deaver, and his well known pathologist, Dr. Stanley Reimann, of Philadelphia. The annual banquet followed the speakers and before adjourning the election of officers for the coming year was held.

Dr. John Gilmore was the newly elected president, Dr. George Viewig was elected vice president, Dr. Robert Armbrecht treasurer, and Dr. John G. Thoner for the third time was made secretary.

As to the talk of Dr. Deaver, something outside of its purely scientific side can be gathered. Almost all of us, everywhere, have heard Dr. Deaver time and again. To discuss him or his methods is very much like analyzing some side of George Washington or Theodore Roosevelt. Yet as always, "the cat may look at the king." What is the secret of the very obvious keen enjoyment displayed by one of his audiences at the gradual unfolding of his subject matter? The answer must be that he is very human and in case that is a bit thick it may be said further that he becomes very intimate with his audience and as he goes along each hearer has the feeling that Dr. Deaver has him off in the corner very casually talking to him alone in the most exclusive manner.

Dr. Deaver talked for more than one hour and if any one of the large audience left we fail to recall it. Why do they not get tired? Because he gauges that very nicely and when he feels he has given a good bit of technical matter, he very promptly tells a joke or recites a personal incident, or gives the internists a little attention.

It is all very diverting and enjoyable. He could be accused of playing up the "wonderful touch" idea to an unwonted degree —but he almost never is. The upshot of it

all is that his audience, although they may not altogether agree with him, leaves him in a happy and quite refreshed frame of mind.

The lesson is that we ought to all avoid being stodgy when we are reading any kind of a paper and that even in a purely scientific recital an excursion on the side into a humorous realm will help the audience to remember what we had to say far better than if—as we often do—put them asleep by too much technical or ultra-scientific pabulum. Dr. George Crile, while not using the same style, also embarks into a few side remarks at times, be the subject ever so profound. These two men, it seems to us, give their audiences the most satisfactory methods in addressing their colleagues of any men in the country.

Dr. John Thoner was elected secretary for the third consecutive time at the May meeting. The retiring president, Dr. C. H. Clovis, has repeatedly said that it was a pleasure to be in office with such a secretary. In fact, he went so far as to say that all the credit of his office might easily be given to his secretary. The position of any secretary is one that requires patience, tact and a gift of diplomacy. Do we take time to compliment our several secretaries on their work? The chances are that we take them for granted. It is probably not too late now to pass them a good word. Let us do it.

Dr. Edward Phillips, one of the best-known surgeons of Wheeling, is seriously ill. He was a former interne of Dr. Deaver. Troubled with a recurring pain over the appendicular region, he resolved to have Dr. Deaver perform the operation on his recent visit to Wheeling. The process had advanced farther than was suspected and all the skill of that eminent specialist on this very disease was called into play to perform a satisfactory operation. A fibrinous exudate condition had already appeared. Several days later an obstruction threatened. Dr. Deaver returned although Dr. Caldwell and Dr. Gilmore had bridged the emergency. He then made a miraculous recovery only to be again faced with a streptococci infection later and at present a liver abscess threatens.

Dr. Deaver has returned to see Dr. Phillips again. Dr. Phillips has one of the largest followings in Wheeling and the interest in his case has amounted to a general concern. The profession has been deeply sympathetic with his gallant fight for life and we all hope he will be spared to a still wider field of influence. It must be added that the public, who very often are careless about the gratitude they display, have shown an extraordinary sorrow over the illness of Dr. Phillips.

HARRY M. HALL, M. D.

Kanawha

A "Symposium on Cancer" by Dr. John Cannaday, Dr. R. K. Buford, Dr. R. H. Walker and Dr. William A. Thornhill featured a very interesting meeting of the Kanawha County Medical Society held at the Hotel Kanawha at 8:30 o'clock on the evening of May 3. More than 50 members of the society were present.

The four principal papers were given by Dr. Cannaday on "Cancer of the Stomach," Dr. Buford on "Cancer of the Uterus," Dr. Walker on "Cancer of the Breast," and Dr. Thornhill on "Cancer of the Skin and the Use of Radium in Treatment of Cancer."

The papers brought out considerable discussion on general cancer. Dr. W. P. Black spoke on cancer of the rectum, Dr. W. S. Shepherd briefly discussed the differential diagnosis of cancer of the larynx, Dr. G. G. Irwin talked on cancer of the urinary tract and Dr. M. I. Mendeloff spoke of cancer of the lungs. These talks were followed by a discussion by Dr. E. B. Henson on the unusual metastesis from cancer.

A meeting of the Kanawha Medical society was held on Tuesday evening, May 31, in the assembly room of the Kanawha hotel and was followed by a buffet luncheon. This was the last spring meeting of the Kanawha society and a large attendance was enjoyed.

The program consisted of a paper on "Urinary Calculi," by Dr. Ray Bobbitt of Huntington, and a paper on "Bone Sarcoma,' by Dr. E. Bennette Henson of Charleston. Both papers were fully discussed by the members present.

Eastern Panhandle

The Eastern Panhandle Medical Society held its last regular meeting at the country home of Dr. and Mrs. G. P. Morison at Shepherdstown on Wednesday, June 15. There were 15 doctors of the component society in attendance and the meeting was one of the best held this year in the Eastern Panhandle.

The program consisted of a paper on "Elbow Fractures with Treatment," by Dr. E. C. Stewart of Winchester, Va., on "The Prostate from the General Practitioner's Viewpoint," by Dr. H. G. Tonkin of Martinsburg, and "The Doctor's Litany," by Dr. W. W. Brown of Shenandoah Junction. The meeting was presided over by Dr. C. C. Johnson. president.

A. B. EAGLE, Sec.

GENERAL NEWS NOTES

Council Election

Dr. R. H. Dunn of South Charleston, was elected chairman of the council at a meeting held on Thursday afternoon, June 23, to succeed Dr. C. A. Ray of Charleston, who was elected to the presidency of the association.

Previous to the Thursday meeting, the entire publication committee consisting of Dr. C. A. Ray, editor, Dr. J. R. Bloss of Huntington, Dr. Walter E. Vest of Huntington, Dr. Harry M. Hall of Wheeling and Dr. J. Howard Anderson of Marytown, was reelected. Dr. Bloss was selected Thursday to fill the vacancy as editor of *The Journal* caused by the elevation of Dr. Ray to the presidency. The new officials will take office on January 1, 1928.

New Officers for 1928

The following new officials and executives of the West Virginia State Medical Association were elected at a meeting of the house of delegates on Thursday morning, June 23:

President, Dr. C. A. Ray, Charleston.

1st Vice-President, Dr. D. G. Preston, Lewisburg.

2nd Vice-President, Dr. E. L. Armbrecht, Wheeling.

3rd Vice-President, Dr. W. C. Swan, Huntington.

Treasurer, Dr. T. M. Barber, Charleston.

Councillor, 1st district, Dr. C. G. Morgan, Moundsville.

Councillor, 2nd district, Dr. C. H. Hall, Elkins.

Councillor, 3rd district, Dr. I. D. Cole, Clarksburg.

Councillor, 4th district, Dr. W. E. Vest, Huntington.

Councillor, 5th district, Dr. H. G. Steele, Bluefield.

Councillor, 6th district, Dr. H. A. Walkup, Mt. Hope.

Delegate A. M. A. Meet, Dr. H. P. Linsz, Wheeling.

Alternate, Dr. H. M. Hall, Wheeling.

The following committees were elected at the same meeting of the house of delegates:

Committee on Scientific Work

Dr. R. U. Drinkard, Wheeling.
Dr. O. B. Biern, Huntington.
Dr. Albert Hoge, Huntington.

Member Committee on Professional Relations

Dr. E. P. Smith, Fairmont.

Committee on Necrology

Dr. C. O. Henry, Fairmont.
Dr. W. W. Golden, Elkins.
Dr. L. J. Bernstein, Wellsburg.

Committee on Medical Education

Dr. John N. Simpson, Morgantown.
Dr. W. T. Henshaw, Charleston.
Dr. W. S. Fulton, Wheeling.

Workmen's Compensation Committee

Dr. J. Ross Hunter, Charleston.
Dr. R. H. Walker, Charleston.
Dr. W. A. MacMillan, Charleston.

Committee on Preventive Medicine

Dr. David Littlejohn, Charleston.
Dr. John Thames, Charleston.
Dr. W. H. McLain, Charleston.

NEWS SUMMARY OF A. M. A. CONVENTION

At the annual session of the American Medical Association in Washington, May 16 to 20, there was a registered attendance of 6,273, meaning at least 10,000 visitors to the convention.

Among the outstanding features was an address by the President of the United States, Calvin Coolidge, who conferred high praise on the medical profession for its contribution to the social organization. The President and Mrs. Coolidge also held a special reception for physicians, on the White House lawn.

The departments of the national government, including the Army and Navy medical departments, the U. S. Public Health Service and many medical bureaus, especially those of the Department of the Interior, assembled exhibitions for the visiting guests.

The publicity relative to the session in the newspapers of the country was the greatest ever given to an annual meeting of the association. This is presumably a reflection both of the increasing interest of the public in the progress of medicine and of the cooperation between the American Medical Association and the American press. Practically all of the great press services and newspapers have special representatives in Washington. Arrangements had been made by the headquarters of the American Medical Association for aiding the dissemination of publicity through these channels, both previous to and during the session.

House of Delegates

The following statement concerning the proceedings of the House of Delegates is not in any sense complete. A fuller outline has already appeared in *The Journal*, and the complete record will be printed in the official "Proceedings."

At the first meeting of the House of Delegates, May 16, the speaker, Dr. F. C. Warnshuis, urged continued attention to the problems of nursing education and nursing service in the United States. He suggested an attempt to solve the question of the requirements, qualifications and standards for a capable, competent surgeon and a means to aid the public in making such an identification. He also urged state licensure and special hospital legislation as a means for protecting the public against poor and incompetent institutions.

The president of the association, Dr. Wendell C. Phillips, urged continuous attention to the education of the public in matters of health. He suggested a proper system of censorship to safeguard medical publicity. He again recommended consideration of the restrictions placed on physicians in the prescribing of alcoholic liquors.

The president-elect, Dr. Jabez N. Jackson, urged new attention to the problems of medical ethics, and the preparation of a manual which would make clear both to the profession and to the public the intent of the "Principles of Medical Ethics."

The president of the association appointed a committee, consisting of Drs. Ray Lyman Wilbur, Rock Sleyster, G. E. Follansbee, Harlow Brooks and William Allen Pusey to act on public responsibility, having to do with the relationship of the medical profession to the public.

On recommendation of the Judicial Council, the opinion was adopted that all articles of an educational nature on medical or health subjects intended for the lay press or lay audiences should give expression to the concensus of opinion of the medical profession rather than to personal views, and that such articles should appear preferably under the auspices of the American Medical Association or of one of its component

county societies or constituent state associations.

Report on Medical Education

In considering the report of the Council on Medical Education and Hospitals, the House of Delegates adopted the report of its reference committee. This committee considered as overoptomistic the views of the council that the present medical schools are adequate to supply places for those wishing to enter a medical school. The reference committee believed that the Council on Medical Education might devote more attention to the problems of the supply of physicians and the question of medical care in rural districts, to the preparation of a statement on the defects in the present situation and to similar subjects.

The reference committee considered it necessary that the present curriculum be reduced materially and that any consideration of a new curriculum should give special attention to the training of general practitioners, with brief courses in the more important specialties. The recent decision of the Council to recognize as suitable for internship only hospitals in which there is a minimum percentage of necropsies was approved and recommended.

Investigation of Heroin

The reference committee on legislation and public relation requested the board of trustees of the American Medical Association to have another investigation of the use of heroin made by the Council on Pharmacy and Chemistry in conjunction with some of the scientific sections.

Evaluation of Remedies

It was recommended that the association condemn as unwise and futile any attempt to evaluate a therapeutic agent by legislative fiat, referendum, popular vote or any similar method. The conclusion was adopted that such evaluation can be made only by the investigation and decision of experts.

Disaster Relief

A consideration of the report of the committee on disaster relief resulted in the adoption of a recommendation that the American Medical Association urge constituent associations and component societies that have not already established disaster relief committees to do so as soon as possible.

Mortality Statistics

It was urged by the adoption of a report of the reference committee on hygiene and public health that the attention of the United States Census Bureau be called to the impossibility of comparison of statements on maternal mortality of the various nations and that the bureau be urged to secure a strictly uniform definition of maternal mortality by the bureaus of vital statistics of various nations.

Cosmetics

A resolution urging Congress to enact a law to control the manufacture, distribution, sale and commercial use of toilet preparations for preserving and enhancing personal beauty was referred to the board of trustees for action.

Education of Surgeons

The reference committee on the speaker's address commended the section having to do with the duty of the American Medical Association to standardize and elevate the practice of medicine and surgery within and without hospitals through its own organization, but not through legislative or other agencies.

Appointment of Delegates

The reference committee urged that state societies appoint delegates in time to permit the speaker of the House of Delegates to announce the reference committees thirty days in advance of the session, so that these committees might give adequate attention to the various reports of officers and councils before the time of the session.

Health Conferences

The importance of health conferences was recognized and attempts to reduce the du-

plication of efforts in various fields were encouraged.

Contract Practice

The report of the Judicial Council of the American Medical Association to the effect that there were both ethical and unethical contracts possible, and that each contract must be judged on its own merits was approved by the committee and adopted by the House of Delegates.

Charges for Services to Insurance and Indemnity Companies

A resolution to the effect that physicians were not under any obligation to provide information to insurance or indemnity companies unless paid the usual fees charged for similar services to private patients was approved and adopted by the House of Delegates.

Place of Next Annual Meeting

The board of trustees was asked to investigate places for holding the next annual session and to present its approval of two or more cities which, on investigation, have been found to possess ample facilities. The board of trustees has authority to change the place of holding the session if for any reason it is deemed advisable.

Income Tax Deductions

A resolution requesting the promotion of an amendment to the revenue bill relating to income tax, which gives the individual a right to deduct from his income tax the expenses of medical treatment for himself and family was referred to the board of trustees, with the suggestion that they in turn transmit it to constituent state societies for action.

Nursing Education

Reports of the various committees on nursing education were received by the House of Delegates, and it was recommended that the American Medical Association give support in the work of the committee on grading of nursing schools and share in its financial program. The board of trustees appropriated the sum of $5,000 for one year toward this end.

The Physicians' Home

A special committee reported on the need of a physicians' home. The committee recommended that the secretary of the association be requested to secure full information in regard to what is now being done by the profession for aged and incapacitated physicians, in various states and cities, so that other states or component societies may take measures to afford relief for dependent, worthy physicians, their widows and their orphans who may be in need. It was recommended that the secretary make a report on this matter at the next annual meeting. The committee was convinced that the need for a national home is not sufficient to warrant the American Medical Association in establishing, managing and sustaining a home.

Collaboration with Health Officers

Collaboration between physicians and health officers was urged as the only method of meeting the public health situation for the good of the profession and the public.

Trachoma Among Indians

The American Medical Association was urged to continue its affiliations with all the activities of the United States government of the work being done by the national committee for the prevention of blindness for the elimination of trachoma among Indians.

Government Health Activities

The House of Delegates reaffirmed its approval in principle of the Parker bill, coordinating the health activities of the federal government under the direction of the United States Public Health Service. It also adopted the report of the reference committee recommending approval of the Ransdall bill, appropriating $10,000,000 to establish a national institute of health under the control of the surgeon-general of the United States Public Health Service.

Disabled Emergency Medical Officers

The House of Delegates reaffirmed its

favorable action of 1922, requesting the passage of the Bursum bill, which relates to the retirement of disabled emergency army medical officers on a parity with all other classes of disabled officers of the World war now on the retired list.

Medicinal Liquor

The report of the reference committee of the House of Delegates to the effect that hereafter the House of Delegates shall not pass any resolution pertaining to the therapeutic value of anything and that no committee report empowering any such resolution shall hereafter be presented until it has been considered by the Council on Scientific Assembly and the Council on Pharmacy and Chemistry was adopted. Recommendation was made that the special committee on alcoholic liquors be continued and be directed to cooperate in preparing a bill to be presented to Congress correcting the unfortunate provision of the Volstead Act limiting the amount of alcohol used, and providing such regulations as will permit doctors to prescribe whatever amounts of alcoholic liquors may be needed for their patients, and subject to such reasonable restriction as may be thought wise and best after a conference with the head of the prohibition department.

It was also urged that the American Medical Association declare its adherence to the principle that legislative bodies composed of laymen should not enact restrictive laws regulating the administration of any therapeutic agent by physicians legally qualified to practice medicine.

A supplementary report of the Judicial Council recommended that "Every resolution presented relating to the alcohol question shall be referred to the Board of Trustees for investigation." The recomendation was adopted by the House of Delegates.

Caustic Poisons

The House of Delegates approved the resolution extending to members of Congress the thanks of the American Medical Association for passing the Caustic Poison Act in 1927.

Form Letters on Periodical Physical Examination

A resolution asking the board of trustees to prepare approved forms of letters or literature which may be sent out by county medical societies to the public to promote the value of periodic health examinations and information that the examinations can be made and records kept by qualified physicians who are members of the American Medical Association, in this manner helping to circumvent the harmful advertising activities of commercial agencies dealing with periodic health examinations, was endorsed by the reference committee and adopted by the House of Delegates.

Contraception

A resolution recommending the alteration of existing laws, wherever necessary, so that physicians may legally give contraceptive information to their patients in the regular course of practice was referred to the board of trustees of the association.

Health Hazards in Industry

The resolution petitioning Congress to make possible an increase in the personnel and resources of the United States Public Health Service in order that the service may extend its activities in the field of industrial hygiene was referred to the board of trustees.

Amendments to the By-Laws

Notices of proposed amendments to the by-laws: (1) defining the powers of the Judicial Council; (2) defining the legislative powers of the association and the right of the House of Delegates to expel members or Fellows on recommendation of the Judicial Council; (3) a resolution changing the members of the Council on Medical Education and Hospitals was presented and must lie over to 1928 for action.

Woman's Auxiliary

A motion that the House of Delegates request the board of trustees to appoint a

liaison committee between the American Medical Association and the Woman's Auxiliary was adopted.

Election of Officers

In the election of officers, Dr. William S. Thayer of Baltimore was elected president of the association; Dr. Charles A. Elliott of Chicago, vice-president; Drs. Olin West secretary, and Austin A. Hayden, treasurer, were reelected, as were also the speaker, Dr. Frederick C. Warnshuis of Grand Rapids, Mich., and vice-speaker, Dr. Allen H. Bunce of Atlanta, and the trustees, Drs. Edward B. Heckel of Pittsburgh and Rock Sleyster of Wauwatosa, Wis.

The president, Dr. Jabez N. Jackson, made the following nominations to appointments on the various councils: For the Judicial Council, Dr. Donald McCrae, Jr., Council Bluffs, Iowa, and Dr. Frank Cregor of Indianapolis, to succeed Dr. Thayer; for the Council on Medical Education and Hospitals, Dr. Emmett P. North, St. Louis; for the Council on Scientific Assembly, Dr. Frank H. Lahey of Boston. These nominations were confirmed.

The Scientific Sections

More than three hundred manuscripts were read in the sixteen scientific sections of the association, covering many medical subjects. A complete list of the papers read with the names of the persons discussing them appears in *The Journal of the American Medical Association* for June 11, 1927, beginning on page 1896.

METHOD OF CHOOSING REPUTABLE DOCTORS

Below are found 12 guiding points for the average man or woman in choosing a doctor. They were gleaned from an article by Dr. William Everett Musgrave in a recent issue of *Hygeia* and are published here for their particular interest to the members of the West Virginia State Medical Association:

1. The education of the true physician is attested by the degree of Doctor of Medicine from some worthy institution of learning.

2. Membership in county, state and national medical associations attest his moral, ethical and professional standing.

3. He may be judged as a man (or woman) by the same standards applicable to others.

4. His license should attest his legal standing.

5. The true physician never practices, never recognizes and never joins under any circumstances those who practice sectarian or secular medicine or fads or cure-alls of any sort.

6. He considers his patient rather than the disease, using all proved knowledge and methods of treatment, advising how to prevent ill health and remembering that mind, body and soul are linked in health and illness.

7. Whenever indicated he asks other physicians for the assistance he needs, as no one person can practice to the best advantage all the phases of medicine.

8. He insures his patients adequate consultation, laboratory, X-ray, nursing, hospital and other services for their welfare.

9. He follows the moral code of his profession, which insures confidential, sympathetic, consecrated service to his patients.

10. Like any other servant he is entitled to just compensation consistent with the patient's ability to pay.

11. He neither indulges in nor permits personal puffery. His name appears in the public press only as the author of dignified statements concerning the health of some patient whose welfare is the public concern. More rarely he writes an article or gives an interview for public information on some health subject.

12. He takes an active part in medical society meetings and reads good medical journals. He thoroughly examines and carefully studies his patients, making written records of his findings. He is never boastful or inclined to discuss his patients with others. He never guesses, but invites consultation when in doubt. He realizes his responsibilities and approaches his problems with humility, seriousness and earnestness of purpose. His fellow physicians call on him for illness in their families or for consultation when they are puzzled.

DOCTORS ISSUED STATE LICENSES

Thirty-four doctors were licensed to practice medicine in West Virrginia at the recent meeting of the Public Health Council, it was announced today by Dr. W. T. Henshaw, state health commissioner and secretary of the council. Of this number twenty-one were licensed through reciprocity, while thirteen passed the state medical examination, receiving an average of 80 per cent or more on the eleven subjects required by the medical practice act of the state.

The Public Health Council met in Morgantown in June for the purpose of holding examinations in the primary branches of medicine for those completing the two-year medical course. The next regular examinations for license to practice medicine in the state will be held in July at Martinsburg. At that time the new fee system, enacted by the legislature, will become effective. This provides for an increase of all fees for those applying for license to practice medicine in the state. The fee for license by examination, which was formerly $10, has been raised to $25, while the reciprocity fee has been raised from $25 to $100. This increase in fees was passed at the present session of the legislature at the request of the public health council with the approval of the legislative committee of the West Virginia State Medical Association, with a view to making the council self-supporting and the fees more nearly corresponding with those charged by other states. Prior to this the public health council has been financed almost wholly by the state.

The doctors recently licensed to practice in West Virginia are, by examination:

Wm. J. P. Dye, Sistersville, W. Va.; James F. Davidson, Washington, D. C.; Paul David Luckey, Pittsburgh, Pa.; John P. Gentile, Thurmond, W. Va.; Wm. Crawford Ballard, Barnwell, S. C.; Wm. Clewell Polsue, Charleston, W. Va.; Joseph Kinsthe Rowland, Princeton, W. Va.; David Berman, Moundsville, W. Va.; Peter James McOwen, Youngstown, Ohio; Samuel W. Cottle, Morgantown, W. Va.; John Melvin Crymes, Sharlow, W. Va.; Roscoe C. Murray, Washington, D. C.; Howard W. Current, Thornton, W. Va.

The following received licenses through reciprocity:

Wm. Otis Bailey, Leesburg, Va.; Jack Henson Beachley, Baltimore, Md.; Wm. Henry Battle, Jr., Jarratt, Va.; Albert F. Conrey, Baltimore, Md.; John Andrew G. Davis, Jr., Greenwood, Va.; Charles Ewing Dyer, Pulaski, Va.; Wm. Howard Enneis, Madison, W. Va.; Francis Alva Ellis, Baltimore, Md.; Wm. Augustus Funk, Parkersburg, W. Va.; Wm. Archibald Flick, Atlanta, Ga.; Richard Dulany Gill, Washington, D. C.; Frank Samuel Harkleroad, Paris, Tenn.; Allen Forrest Murphy, St. Marys, W. Va.; John Edward Parks, Somerville, Tenn.; Albert Herman Rudolph, Ashland, Ky.; Robert Lee Shuler, Chilhowie, Va ; Wm. McHenry Swickard, Thurmond, W. Va.; Arthur Jay White, South Charleston, W. Va.; Alexander Douglas Martin, Concord, N. H.; Arthur L. Oilar, Glenville, W. Va.; James Scotchfield Copeland, Nashville, Tenn.

SAYS EDEMA KILLED GEORGE WASHINGTON

Commenting on a paper read before annual meeting of the Medical Society of Virginia by Dr. Walter A. Wells of Washington, D. C., on "The Last Illness, and Death, of George Washington," and published in a recent issue of *The Virginia Medical Journal*, the *New York State Journal of Medicine* says that Dr. Wells reached the conclusion that General Washington's death resulted from inflammatory edema of the larynx. The physician's paper, the result of much historic research, included accounts of the many illnesses from which Washington suffered during various periods of his life. The much discussed point of whether the first president of the United States was the victim of too much bleeding on the part of overzealous physicians is also dealt with. And it is recorded that he was always down-hearted when ill and believed that the end was at hand, but that he was unafraid of the prospect.

Here is an abstract of Dr. Wells' paper:

"Thursday, Dec. 12, 1799, was raw, but Washington rode about his farm from 10 to 3 o'clock, all through a sleet storm. On Friday, the 13th, Washington had a severe sore throat, but went out to mark some trees in the afternoon. That night he was hoarse, but he looked over the papers and read many extracts aloud. On Saturday, the 14th, he called Mrs. Washington at 3 o'clock in the morning, saying that he felt very sick and had an ague. He could then scarcely speak, and he breathed with difficulty, and could hardly swallow. At about daybreak a pint of blood was drawn from the General by the overseer of his farm.

"The first call of his physician, Dr. Craik, was made at 9 o'clock that morning. The doctor bled Washington again, and gave him a gargle, which nearly strangled him. At 11 o'clock the bleeding was done for a third time. At 3 o'clock Dr. Elisha Dick of Alexandria and Dr. G. R. Brown of Port Tobacco came to consult with Dr. Craik, and the three bled Washington for the fourth time. The record is that the blood came slow and thick, but there was no fainting.

"All through the afternoon Washington appeared to be in great distress owing to the difficulty of breathing. He continued in that state up to ten minutes before the end, when he breathed easier. He died between 10 and 11 o'clock on that Saturday evening, Dec. 14, 1799.

"The diagnosis made by the attending physicians was syanche trachealis. Dr. Wells suggests four possible diagnoses according to the present standards:

"1. Acute laryngitis.

"2. Quinsy.

"3. Laryngeal diphtheria.

"4. Inflammatory edema of the larynx.

"Dr Wells discusses each of these possibilities, and decides that the fourth is correct. He gives the sources of information available to doctors in 1799, and says that a textbook on medicine in common use was 'First Lines in the Practice of Medicine,' by William Cullen, professor of medicine in Edinburgh, from which place both Dr. Craik and Dr. Brown graduated. Dr. Cullen describes cyanche trachealis as a rare disease, attended with a croaking voice, difficult respiration, fever, a sense of 'straightening' about the larynx. 'It does not always run a course of inflammation, but frequently produces such an obstruction of a passage of air as suffocates and thereby proves suddenly fatal.'

"Regarding treatment, Dr. Cullen's book says:

" 'As we suppose the disease to be an inflammatory affection, so we attempt a cure of it by the usual methods of inflammation and which for the most part we have found effectual. Bleeding, both topical and general, has often given almost immediate relief, and by bleeding repeatedly has entirely cured the disease. Vomiting immediately after bleeding seems to be of use, and sometimes removes the disease.'

"Dr. Wells discusses the two modern treatments, adrenalin and tracheotomy, which would be used today. Adrenalin was discovered in 1901, over one hundred years after Washington's death. Tracheotomy was first done in 1782 by Andree of London, but the operation was seldom used. Two French surgeons had published a pamphlet in 1798, advocating the operation in angina; but it was not generally accepted as of much value until 1826, when Bretonneau wrote on laryngeal diphtheria.

"Dr. Wells discussed the criticism that the bleeding killed the General. Bleeding was the standard procedure of the day, and doctors would not have persisted in doing it if it had been often attended with bad results.

"Dr. Wells also discusses General Washington's previous health history. His father had died at the age of 49 from an affection similar to that of the General. His grandfather died at the age of 37, and his great-grandfather at 54. Nearly all the other known members of the Washington family were short lived; but his mother was 82 when she died.

"Washington had a severe attack of smallpox which he caught in the Barbados, where he had gone with his brother, Lawrence, who seems to have had tuberculosis. Soon after his return from the Barbados he had

'a violent attack of pleurisy, which reduced me very low.'

"During the Braddock campaign he developed an unknown fever, which his servant also had.

"Two years after the Braddock campaign, while he was still doing frontier work with the army, Washington had a severe attack of dysentery, which compelled him to return home. He suffered from recurrent attacks of the disease for some months.

"In 1761, Washington had a fever, probably malarial. Dysentery recurred in 1768 and kept the General in the house for a week.

"Washington had malaria in 1786, and was relieved by 'bark' administered by Dr. Craik.

"In the late spring of 1789, Washington had a severe carbuncle on his left hip, which kept him in bed for six weeks, while he was treated by Dr. Bard.

"When Washington visited Boston a little later he caught a troublesome cold, with inflammation of his eyes. This form of sickness became prevalent throughout the city, and was called the 'Washington influenza.'

"In 1790, Washington had pneumonia in Philadelphia, in which he suffered two relapses.

"In 1793, Jefferson wrote to Madison, 'the President is not well. Little lingering fevers have been hanging about him for a week or ten days, and affecting his look most remarkably.'

"In August, 1799, he wrote of 'debilitated health occasioned by the fever which deprived me of twenty pounds of weight.'

"Washington began to have trouble with his teeth before 1754, and he lost them all and replaced them with a false set at a comparatively early age. He began to use glasses at the age of 46. He was noticeably hard of hearing during his later years.

"Whenever he was sick, Washington was always downhearted, and thought that the end was at hand. Yet he never showed the least sign of fear, but always maintained that he was ready to meet death at any time.

"Washington was large of stature—6 feet 3½ inches in height—and was athletic and muscular. He lived much in the open air, and had the reputation of eating simply. Yet he was peculiarly subject to sickness.

"Dr. Wells has made a valuable contribution to medical literature by rendering available the facts about the health history of George Washington."—*The New York Times.*

NEW YORK REPORTS ON GRADUATE WORK

The report of the committee on public health and medical education of the New York State Medical Association, made recently by Dr. Charles Gordon, chairman, may be of interest to the West Virginia association and particularly to those doctors who feel that there should be some arrangement made for graduate medical education in this state. The report follows:

During the past two years the committee on public health and medical education has carried graduate medical education to 49 counties of the state. Lectures and demonstrations, with patients when possible, have been given in obstetrics, surgery, pediatrics, gastro-enterology, endocrinology, hypertension, nephritis, dermatology, syphilis, psychiatry, urology, and the chest, including tuberculosis, empyema and cardiac disease.

For the most part these lectures are scheduled to run from one to two hours on the same day and hour each week for six successive weeks. Each county, however, may have as many lectures as it wants. Nassau is now having its second series of 20. Montgomery covered hypertension in an intensive course of eight weeks, one day a week, long sessions, the lecturer cooperating with a dietitian, checking results from week to week on the same patients. Oneida's course in cardiac diseases, although only six periods, covered a wide range, and much time was given to the presentation of cases. In Monroe, daily lectures were given for two weeks in obstetrics and pediatrics, and this plan secured excellent attendance.

When possible, courses have been arranged in adjoining counties, so that lecturers may cover more than one county in the same day—afternoon in one county and evening in the other, or at one central point

for two or more counties. At no time, however, has any effort been made to save lectures at the expense of good attendance.

Since the publication of our last annual report, courses in obstetrics have been given in the counties of Cattaraugus, Chautauqua, Clinton, Essex, Franklin, Genesee, Monroe, Nassau, Orange, Orleans, Otsego, Rockland, Schoharie, Steuben (Corning), Tioga, Ulster, Warren, Washington and Wyoming. Courses in pediatrics have been given in the counties of Albany, Broome, Chemung, Chenango, Columbia, Erie, Fulton, Herkimer, Jefferson, Monroe, Nassau, Niagara, Ontario, Rensselaer, St. Lawrence, Seneca, Steuben (Hornell), Wayne and Yates.

Courses have been given in hypertension in Montgomery, gastro-enterology in Sullivan and Nassau, cardiac disease in Oneida, and single talks in cardiac disease in Cortland, Otsego, Nassau, Steuben and Tompkins; office orthopedics in Broome; cancer of the breast and empyema in Otsego; endocrinology, cancer of the breast, factures, obstetrics and urology in Nassau.

Dates have been definitely set for courses in pediatrics for Montgomery, Otsego and Schoharie; general medicine in Jefferson and St. Lawrence; syphilis in Washington and Warren; and diseases of the heart and lungs in Columbia, possibly including Dutchess-Putnam.

Arrangements are being made for courses in obstetrics or pediatrics for Allegany, Broome, Cayuga, Chenango, Montgomery, Oneida, and Tompkins, possibly including Livingston.

Maps showing our detailed educational activities are incorporated in this report.

Effort is now being made to stimulate in Albany, Buffalo, Rochester, Syracuse, Utica and Yonkers, a practical lecture series such as has achieved phenomenal success in the counties of Kings and Queens.

CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces an open competitive examination as Physiotherapy Aide.

Applications for physiotherapy aide must be on file at Washington, D. C., not later than July 30 and November 12, 1927. The date for assembling of competitors will be stated on admission cards sent to applicants and will be about ten days after the date for the close of receipt of applications. Applications received after closing date will be considered for next date.

The examination is to fill vacancies in the field service of the Veterans' Bureau and the Public Health Service, and in positions requiring similar qualifications.

Competitors will be rated on a mental test, practical questions, and their education, training and experience. Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the postoffice or customhouse in any city.

Physical Therapy

Norman E. Titus, New York (*Journal A. M. A.*, Jan. 23, 1926), describes the department of physical therapy of the Beekman Street Hospital. He says that when space is considered in planning a department of physical therapy, it always would be wise to make the minimum 2,000 square feet, even in a small hospital of 100 beds. It is particularly difficult to expand a department, as the wiring and arrangement of apparatus should be planned originally to last for a long time. The following apparatus represents a standard of minimal equipment, which, with the usual cash and hospital discounts, can be brought for less than $5,000: 1. Two sixteen-plate static machines. 2. Three high frequency machines, one of which is portable. 3. One Morse wave generator. 4. One Bristow coil. 5. One galvanic and faradic wall plate. 6. One galvanic and sinusoidal wall plate. 7. Two air cooled mercury vapor arc lamps. 8. One water cooled mercury vapor arc lamp, portable. 9. Four large thermolites. 10. Six small thermolites. 11. One "deep therapy" lamp. 12. Nine massage tables. 13. Two desks, one filing cabinet, and chairs. In spacing this apparatus around the department, certain factors were necessary to consider. As a static machine makes quite a noise when used to give the static wave current, it is best to place these machines in one room divided off by a par-

tition. The minimal floor space in which a sixteen-plate static machine can be installed is 15 feet square. If it is possible to allot a space 15x18, it is even better. It is also necessary that the rooms in which these machines are set up have as much ventilation and sunlight as possible. It is handy to have water in a static room because electrodes should be wet when put on the patient. Each machine requires two ground wires, and it is found to be most practical to have them overhead. With the two machines working at Beekman Street Hospital, one machine is grounded to the sprinkler system and the other to the steam radiator, while "treatment grounds," as they might be called, are attached to a drain pipe and a hot water pipe. The room is partially divided in half by a 7 foot office partition, and curtained across the door so that patients can undress without seeing one another. The other rooms are divided into cubicles by means of wires stretched from wall to wall, 7 feet from the floor, from which ordinary hospital crib sheets are suspended by hook safety pins.. Crib sheets are of a standard size, 6 feet in length, and can be washed easily in the hospital laundry and really are much better than curtains specially made. The massage tables used are of heavy construction, measuring 84x30 inches. The tops are covered with padding and a waterproof material, and one end is raised as a headpiece. The top of the tables is 30 inches from the floor. This height is specified, as it makes it much easier for the masseurs to give treatments and it is not too high for patients to mount. Each table has a shelf underneath, 1 foot from the floor, on which towels and electrodes can be placed; and instead of having hooks in the cubicles, clothing can be put on this shelf and kept with the patient. The floor of the department is covered with a rubber composition. This is easier on the personnel and also has an added advantage in the fact that the liability of any machine becoming grounded and the technician unexpectedly shocking the patient is obviated. There is no equipment for mechanotherapy or hydrotherapy, because it is felt that exercise, active, passive and resistive, done under the careful eye of a technician, is better than attaching the patient to some machine that makes him do only passive exercise. Hydrotherapy has rather a small field in the present work of physiotherapy. Such treatment is of more use in a hospital where chronic conditions are treated. Each week when full ward rounds are made by the entire surgical staff, the director of the department of physiotherapy participates in these rounds and reports on all cases under his care. This also gives the staff a chance to refer cases to the department after a consultation at the bedside. Such a procedure gives the surgical staff an insight into the way physiotherapy can help.

The Health of the Mind

Today both medicine and public health are having problems of mental disorders forced upon their attention. Too long have these vital interests been wholly neglected or left to conventional handling, to gifts of personality in physicians, to exploitation by cults, fanatics, or charlatans. But changes are coming about rapidly.

During recent years the care and treatment of the insane have been put upon a new basis. More intelligent methods for dealing with the feeble-minded have been worked out. The better penal institutions rely more and more upon psychiatrists for the mental examination of prisoners. Juvenile courts of the more progressive type count upon the services of similar experts.

From the more obviously defective or abnormal, the movement has gone on to include behavior- or habit-clinics for young children, special classes for backward school pupils, and work among adolescents and adults who are victims of various nervous and mental disorders. Of late, college students have been receiving attention. In a number of university centers there are now pyschiatrists, psychologists, and mental hygienists who are looking after under-graduates. These young people get upset in many ways: some cannot study, others become bashful and retiring, still others grow morbid and sulky, a few develop bullying habits. A number of students, the pride of fond par-

ents and the heroes of small towns, suffer acutely from a feeling of inferiority and failure in a large university setting. It is the task of the mental specialist to interpret to the student his behavior and to show him how he is concealing from himself facts he ought to face; in short to help him to get adjusted to his new life.

A beginning is being made in doing something of the same sort in industry. The growth of modern large-scale industry has brought to light many problems of adjustment among the labor forces. Studies and experiments by specialists in psychology and mental hygiene are at any rate suggesting significant possibilities in this field.

With respect to mental diseases the tendency has been away from preoccupation with cure to an interest in prevention. The name mental hygiene has been given to the knowledge and technique by which to an increasing extent early habits may be controlled, delinquency forestalled, abnormalities of behavior ad attitude corrected, even many forms of insanity avoided. Mental hygiene, as its scientific basis becomes more secure and its methods increasingly efficient, may be expected to take its place in a well-rounded program of preventive medicine and public health.

For a number of years the Foundation has contributed to the budget of the National Committee for Mental Hygiene. This aid was continued during 1926 and included funds for fellowships for the training of personnel. Gifts were also made to the Canadian National Committee which is conducting a special study of school children and is granting fellowships for advanced students.

—Rockefeller Foundation.

HOOKWORM FOUND IN WEST VIRGINIA

Hookworm has invaded West Virginia. This became known recently when the State Hygienic laboratory completed tests on specimens sent in by Dr. W. H. Enneis, director of the full time health unit of Boone county.

Out of eighteen suspicious cases it was found that eight definitely had hookworm, while the other specimens showed infection from other intestinal parasites.

This discovery is the result of a survey now being conducted by Dr. Enneis in Boone county, following the diagnosis of a case of mysterious illness of a miner some months ago. Both the state health department and the Boone county health unit are now engaged in making a careful study of the prevalence of hookworm in West Virginia with a view to its control and eradication.

Hookworm has been sporadic in Boone county for several years.

Jefferson Medical

Plans for the further development of Jefferson Medical College of Philadelphia, which include an outline for raising $1,500,000 for the construction of additional buildings, have been submitted to the *West Virginia Medical Journal* with a request that the campaign be given some space therein for the benefit of Jefferson graduates in West Virginia.

The trustees of Jefferson College have presented a two-fold plan for the construction of a modern college building and for the construction of a modern out-patient department, to be housed in the present college building, remodeled for the purpose. The proposed new college building is to be erected at the corner of Walnut and Clifton streets at a cost of $1,500,000 while an additional $500,000 will be needed for the out-patient department.

Trauma and Malignancy

Harry E. Mock and John D. Ellis, Chicago (*Journal A. M. A.*, Jan. 23, 1926), report nine cases of malignancy related to trauma and therefore compensable. In order to say positively that a malignant tumor had developed as a direct result of a single trauma, the authors formulated postulates from the purely medical standpoint as follows: 1. Definite description by the reporting surgeon of the trauma at the time it was sustained. 2. Definite proof by every possible means of examination made at the time the injury was sustained that no tumor already existed at the site of trauma. 3. Definite signs and

symptoms of a pathologic process continuing at the site of the trauma until a malignant tumor appeared and was positively diagnosed. Thus far they have been unable to find a single case that fits these postulates. For application to cases that have a definitely legal aspect and appear before the courts and compensation boards for adjustment, arbitration or litigation, they propose the following postulates, which are the first to be submitted for the consideration of surgeons and compensation boards in the United States. 1. Reasonable proof of a trauma of sufficient seriousness to cause definite tissue changes. (*a*) The injury to be reported within a reasonable period after the accident. (*b*) The examination and condition of the traumatized tissues to be reported by a physician within a reasonable period after the injury. 2. The developing neoplasm must be at the same site as the original injury and must involve some of the tissue which, without reasonable doubt, could have been involved in the original trauma. 3. Definite evidence must be produced to prove that no neoplasm existed at the site of injury prior to the accident. 4. In addition to the history of trauma there must be a history of definite bridging signs, such as a persistent swelling, an unhealed wound, or anatomic and functional disturbances, such as complaint of pain, tenderness or weakness, are impossible to evaluate or visualize and therefore must not be considered competent evidence. 5. The time that has elapsed between a given trauma and the development of the malignant tumor need not be considered if the foregoing conditions have been present; however, it is safe to say that a malignant tumor that develops within two weeks after the trauma existed prior to the injury. 6. A preexistent malignant tumor may be aggravated or accelerated in its growth by a trauma; the trauma may be the first facor to call the patient's attention to the tumor. Treatment should be instituted at once to eradicate the tumor or at least to prolong the patient's life. Under present laws, which provide for compensation in case of aggravation of an existing condition, by trauma, the employer or his insurance company would be held responsible for this treatment, provided aggravation could be shown, and would be forced to pay for the permanent disability that might follow. He should not be held responsible for the subsequent death of the patient due to malignancy which will occur in the majority of these cases, for the trauma could not aggravate to the point of fatality a preexistent condition which already positively doomed the patient. Nor should he be held responsible for hastening the death, for this point could only be one of speculation on the part of the medical profession. 7. In the case of metastatic or secondary tumor developing at the site of trauma, the first four postulates must be met before the employer is held responsible, and such responsibility should be limited to the treatment of the local condition; it should not be extended to include responsibility for the death that is bound to occur shortly, as the trauma could not have aggravated the primary growth.

Infestation by Tapeworm

The ninth native case of infestation with the fish tapeworm in the United States is reported by M. W. Lyon, Jo., South Bend, Ind., (*Journal A. M. A.*, Jan. 23, 1926). The patient was only 4 years of age. Infestation appears to have been an accident or else young children are more susceptible than adults, as an older brother of the patient and four adults all eating the same fish were unaffected. A person harboring a fish tapeworm may expel into the sewerage system about 1,000,000 ova daily. Ova do not develop readily under laboratory conditions. The food requirements of a tapeworm must be considerable when it is realized that the worm can produce germ cells of both sexes at the rate of about a million each twenty-four hours. In the average patient this is probably well taken care of by that "factor of safety" which impels most persons to eat more than is really needed for immediate needs. A person harboring a fish tapeworm may show almost no symptoms caused by its presence, and if the worm does not show evidence of disintegration there may be no essential change in the blood picture from

normal. The spontaneous appearance of the parasite in this case during an attack of scarlet fever is interesting in showing the tendency of a parasite to leave its host when the normal environment of the parasite becomes altered. Lyon is of the opinion that continued pollution of Great Lakes waters by sewage will probably cause the fish tapeworm to become a common parasite in the northern Middle West. South Bend sewers empty into the St. Joseph river, eventually reaching Lake Michigan.

Annual Report Made on Blindness Prevention

The tremendous strides which have been made toward elimination of the principal causes of blindness in the eighteen years since the origin of the movement for the conservation of vision are revealed in the annual report of the National Committee for the Prevention of Blindness which is now being sent to its 20,000 members.

The report entitled "A Year in Review" shows that the percentage of children in the schools for the blind who lost their sight because of ophthalmia neonatorum (babies' sore eyes)—for centuries the principal cause of blindness—has been reduced more than 51 per cent during the life of the Committee. It announces the establishment of the country's first pre-school eye clinics for the examination of the eyes of children too young to read, and describes how in these clinics it has become possible to test the sight of children as young as two to six years.

The report shows that in 113 there were throughout the United States only two sight-saving classes for the education of children with seriously defective vision; that in 1926 there were 265 such classes; but that this is only 5 per cent of the number of such classes needed to provide education for children with serious eye defects without further endangering their sight. More than 4700 additional sight-saving classes are needed, according to the Committe for the Prevention of Blindness.

In charts based on the experience of several of the largest industries of the country, the Committee reports that well organized sight conservation work has made it possible for these companies to save 99 per cent of the expense previously incurred through eye accidents and to save 92 per cent of the time previously lost as the result of eye accidents. Notwithstanding these accomplishments in some plants, the Committe says "hundreds if not thousands of eyes and millions of dollars are still lost annually because of the eye hazards of industrial occupations. Any permanent reduction of these hazards calls for the provision and use of mechanical safety devices, the provision of adequate lighting and sanitary facilities, and the continued education of employers, employees and governmental officials."

In a foreword to the report, Willam Fellowes Morgan, President of the Committee, says: "The underlying cause of blindness, whether it be the result of disease or accident, is usually ignorance. The work of the National Committee for the Prevention of Blindness is, therefore, concentrated largely on pointing the way. Its function is to keep abreast of the scientific advances in medical and pedagogical knowledge and to inform the public in layman's language of such advances and how they might be applied practically in preventing blindness and in saving sight."

BOARD OF OTOLARYNGOLOGY

The American Board of Otolaryngology conducted an examination at Washington, D. C., on May 16 and 17, and at Spokane, Washington, on June 4. Of the 142 men examined at Washington, D. C., 119 were passed and 23 failed to pass the examination. In Spokane, the number passed was 46, and the number failed was 6.

The next examination will be held in Detroit in September 12, 1927. The application for examination should be sent to Dr. H. W. Loeb, secretary, 1402 South Grand Boulevard, St. Louis, Missouri.

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CARCINOMA OF THE BREAST*

By JOHN B. DEAVER, M. D.
Philadelphia, Pa.

ONE of the least encouraging subjects of contemplation in connection with our boasted progress in medicine and surgery is our failure thus far to penetrate the mystery that surrounds the nature of cancer. Technically we define it as a tumor that results from an invasion of epithelial cells which transgress all laws of growth and proportion. But neither experiments in transplantation of cancer cells nor methods for cultivation of tissues *in vitro* have yielded the secret of their lawless growth. All we know is that sometimes external violence, irritation, or internal disease may cause the cancer to develop, familiar examples being, chimney sweep cancer, clay-pipe cancer of the lip, gastric cancer developing on ulcer, cancer of the bile ducts following cholecystic disease, etc. Cancer of the breast, however, does not fall within these categories. It is true that external traumatism occasionally can be elicited in the history of the breast patient, but in the vast majority of cases no such factor is demonstrable. On the other hand the breast is a very frequent site of disease after lactation which with its striking epithelial modifications may be the starting point of cancer. But the incidence of cancer is not much if at all greater among those that have borne children than among non-parous women. Abnormal involution occupies a prominent place in the list of so-called precancerous stages of malignancy. But this again loses significance as an argument owing to the fact that abnormal involution is not infrequently seen in young girls 16 and 17 years of age, and it scarcely seems reasonable to suppose that these younger cases are in any way connected with a disorder that is so evidently a process of tissue decline. Again we must confess our ignorance of the predetermining cause that leads to cancer of the breast.

But one thing we do know and that is that cancer anywhere begins as a purely local condition at a minute focus and spreads. In the breast it begins as a small point which is cancer and as such invades the breast and

*Read before the Ohio County Medical Society, Wheeling, W. Va., May 27th, 1927.

if allowed to remain, all breast tissue will finally be replaced by cancer tissue. Dr. Reimann will show you how, in some of the breasts that have been carriers of very small tumors, the cancerous process pushes its way between and among the adjacent breast tissues in all directions, and the consequent injury to the latter. In whatever way this invasive process begins, whether by mechanical means or by chemical action, once it has started the foundation of cancer is laid and the invasion as far as we know, is continuous and progressive.

Mammary cancer is pre-eminently a disease of the female breast (the male breast being attacked in only about one and a half per cent of cases) arising, as a rule, at the menopause or at a more or less remote time after that phenomenon. Heredity is a factor only in so far as there is a familial susceptibility to the disease. In other words, "the resistance to cancer is a dominant (hereditary) characteristic whose absence creates the susceptibility to cancer." Heredity therefore plays a minor role in the etiology of this type of malignancy. There seems to be no racial resistance to the disease, neither can child-bearing and lactation be held responsible, inasmuch as analysis and careful consideration of all the factors in the study of this aspect of the subject show that married women are proportionately less liable to develop cancer than are unmarried women. The logical conclusion from this would, therefore, be that the changes incidental to menstruation and the menopause are more influential than the functional activities of the breast tissues in the development of malignancy.

On the other hand, disease of the breast, such as pyogenic mastitis may be the starting point of cancer. This we know from the fact that sometimes breast abscesses leave a nodule of scar tissue which may act as a nidus for cancer development. This constitutes a very potent reason why women who have had breast abscesses should submit to frequent examination of the breast, especially at the time of, and for several years after the menopause.

When we come to consider the symptoms of cancer we meet a very disheartening chapter in a very dark story. If pain were an early symptom much of the battle against the disease would be won. For then we might get the cases early at a time when the attack would be more promising of victory. Actual pain, as an early symptom is rare, and even a very malignant type of tumor may progress to ulceration without ever causing pain. Sometimes the patients describe a severe sticking pain or tenderness in the affected breast for several years before any gross changes were discovered. But as a rule the story is that of a painless lump in the breast which shortly before consulting a doctor or surgeon had shown some increase in size or character, or some change in the breast had been noticed, such as gradual shrinking, more or less sudden retraction of the nipple, pitting of the skin, etc. But early symptoms are rarely pronounced, and in this, as we all know, lies the disheartening feature of malignancy. It is for this reason that by propaganda for prompt attention to any abnormality in the breast, we are making every effort to get the cases as early as possible.

One of the earliest signs, not of a precancerous stage, but of the presence of cancer is the pitting of the skin. This as you probably are aware is due to the presence of newly-formed connective tissue, which must contract and the contraction of which causes the retraction of the adjacent fat tissue and the consequent dimpling of the skin. This can often be demonstrated even before the pitting becomes grossly visible and permanent, by fixing the skin to one side of the breast with one hand, and at the same time making pressure on the tumor in the opposite direction, when the typical pitting will appear on the skin directly over the tumor mass. This is of value in determining the question of the nature of the tumor, that is its benignity or malignancy. Prognosis, as Dr. Reimann will show depends mostly on the type of tumor cell.

Retraction of the nipple, while a sign of cancer is also seen in benign conditions, such as tuberculosis of the breast, abnormal involution and infectious granulomas. But in an obese patient with a centrally located deep tumor, and in the absence of other signs, re-

traction of the nipple indicates advanced carcinoma and sometimes, unfortunately, is the first sign at that.

Now that women are more frequently consulting the surgeon for any small lump in the breast, and very often for an imaginary one, he is just so much more frequently called upon than formerly to make the differentiation between a benign and a malignant growth. This can often be done clinically.

From a practical point of view, in examining the breast of a woman who believes she has felt a lump in the breast, the first thing to do is to decide whether or not she is right. This can best be done by placing the flat of the hand on the breast and pressing the gland toward the thorax and then gently rotating the gland. The tumor, if present, will then be felt. The question of its nature then arises. Is it benign or malignant or merely a chronic inflammatory process?

A good working rule is, a movable tumor is a benign tumor. That is to say, movable in the sense that when held between the fingers it can be moved in the breast tissue itself. The presence of a tumor in both breasts of a young woman around 21 years of age and, as a rule, the palpation of two tumors in one breast, are signs in favor of benignity.

The terminology of benign growths of the breast is a large one and as yet not an entirely settled one. For all practical purposes, however, they are usually considered under three headings: fibroadenoma, simple cysts and cystic mastitis or abnormal involution, and tuberculous mastitis. Fibro-adenomatous growths are usually well encapsulated, distinctly movable in the breast tissue, although the overlying skin may be adherent to the neoplasm, but it rarely causes retraction of the nipple or involvement of the axillary glands. Simple cysts of the breast, while not encapsulated are freely movable in the breast tissue and are not surrounded by evidence of inflammation. Chronic cystic mastitis, on the other hand, cannot be dismissed with a simple definition, for both its nomenclature and its picture are variable. Briefly stated, however, it may be described as a cystic disease consisting of multiple minute cysts, increased adenomatous areas, dilated ducts and occasionally senile changes.

While at one time chronic cystic mastitis was regarded as a precancerous condition, the amount of study and investigation to which it has been subjected during the past decade or so, together with careful follow-up records, has led to the definite conclusion that it is not a precancerous state and that its presence, with certain exceptions, does not call for radical operation. The exceptions are non-encapsulated cystic adenomas and typical cases of what are known as Schimmelbusch's disease, Reclus' disease, and senile parenchymatous hypertrophy. It may be well to mention however, that although abnormal involution and cancer may co-exist in the same breast, no one has ever seen abnormal involution change into cancer. The fact is that abnormal involution is probably a secondary process indicating that the breast is diseased, but the cancerous part of the breast was cancer from its onset. Treatment, of course, is surgical the extent of the surgery depending upon the gross appearance and the results of exploration at the operation, and to the less experienced surgeon the report of the frozen section of a specimen removed for diagnosis.

Tuberculous mastitis is rare, both as a disease of the breast and as a site of tuberculous infection. About 150 cases have thus far been reported in the literature. It is of interest for this reason and also because differential diagnosis presents some difficulties. This is due to the fact that in the majority (60-65 per cent) of cases it occurs as a primary disease, generally women in robust health without any evidence or history of tuberculosis elsewhere in the body. In the secondary type of the disease also there is little evidence of marked systemic effect in spite of the presence of foci elsewhere.

Etiologically, there is sufficient evidence at hand to show that a previous mastitis may predispose to tuberculosis in the affected breast. The mode of infection as we view it, in the primary cases is probably through abrasions of the mammary skin or nipple, through the milk ducts, and only very rarely by the lymphatic or vascular route. As a

rule the preoperative diagnosis is cancer and it is only upon bacteriologic and pathologic examination that the definite diagnosis is made. In the primary case there is usually a more or less tender lump, slightly hard but rarely painful, and occasionally a discharge from the nipple. The abscess may open spontaneously. In most instances the skin overlying the tumor is normal in appearance, but when a fistula is present the tumor is adherent and the skin discolored at the site of the fistula. Redness and tenderness are unusual. A triad strongly suggestive of tuberculous mastitis is the presence of one or more fistulous tracts in the breast, retraction of the nipple and enlarged axillary glands.

Treatment here also is operative, usually a simple amputation of the breast with curettement of the axillia.

To return to the subject of malignancy. Not all malignant tumors, as you are aware, are cancer, a few are sarcoma, which are just as insiduous, if not more so, than carcinoma. Its distinguishing feature is its almost stationary character for a long time, followed by a sudden rapid increase in size. In the early stage the tumor is generally well encapsulated and freely movable. The fact that encapsulation is not peculiar to carcoma makes it reasonable to suppose that mammary sarcoma derives its capsule from the benign antecedent from which it grew. This is another argument for early attention to a lump in the breast, as there is no way of determining exactly when an existing tumor becomes sarcoma. As a rule the history is of some antecedent accident, several weeks or months or even years ago, at which time the breast became livid and swollen and afterwards, as it returned to its normal size, a small lump was noted. This remains stationary, freely movable, circumscribed and encapsulated, but entirely painless. Formerly it was only when the rapid increase in size takes place that it was apt to receive attention. But today it is more usual for the patient to seek advice early. It is well to remember that sarcoma of the breast may also make its appearance with symptoms suggestive of mastitis, and may grow and spread with great rapidity. This, however, is rare.

Tumors of the nipple and areola form an interesting chapter in the diseases of the breast. The most familiar no doubt, is Paget's disease, but this as well as the papyillomas, cysts, etc., are comparatively rare, and we shall content ourselves with merely mentioning them. Let us rather devote a few minutes in considering the surgery of the breast.

There is little doubt but that the development and adoption of the radical operation has been instrumental, if not in entirely preventing recurrences, at least in postponing them, and if not in prolonging life, at least in increasing active life. The operation is not radical unless it includes the pectoral fascia, pectoral muscles, lymphatics running from the breast to the axilla and dissection of the axilla. The most radical procedure is probably that devised by Handley, based as it is on his theory that the cancer cells permeate the tissues surrounding the primary growth in all directions, along the plane of the deep fascia, so that the outer limits of the permeated area are, so to say, about equi-distant from the center of the growth. His operation therefore is designed to remove intact "the permeated area of the lymph vascular system which surrounds the primary growth and of the lymph glands which may have been embolically invaded along the trunk lymphatics of the area concerned."

One of the distressing results of operation is lymph edema of the arm, which occurs in at least 10 per cent of cases. While it is more common in recurrent cases, it may occur after any radical operation unassociated with recurrence. Although we know that it is due to lymph obstruction, it is difficult to explain why, with the same technique, it should occur in some cases and not in others, except on the basis of a difference in the afferent lymph channels. Handley has devised the operation of lymphangioplasty for the relief of brawny arm, but as he himself says, it has not been generally adopted because it does not always relieve, and also because it is only applicable to cases that are already so far advanced that a fatal ending, usually from thoracic deposits, is not far off.

Postoperative radiation may relieve the condition somewhat.

In fact with the advent of radiologic treatment it was natural to expect further improvement in operative results, particularly as to the prevention of recurrence, and many surgeons claim that this expectation has been justified. While I concur with this opinion, I cannot agree with those who advocate treating operable cancer of the breast by x-ray without operation, unless other conditions contra-indicate surgery. In passing I may add that the newer x-ray treatment is more efficient than the older methods; also irradation in order to be effective must be applied over a field sufficiently wide to include any possible cancer cells that may have been left lurking at the "microscopic, growing edge" of the primary tumor.

What has been said of x-ray treatment of cancer of the breast applies likewise to radium; that is, to say, it does not supplant surgery in the operable case but may be of value as a post-operative measure as a prophylaxis against recurrence, or in the treatment of inoperable recurrences, especially in the mediastinal or in the supraclavicular region.

Is the radical operation limited? Yes. It will not accomplish much, if anything in metastasis to the armpit and to either the supra or intra-clavicular regions. That is, in extensive axillary metastasis; involvement of the entire breast, where the latter is more or less fixed; in metastasis to the chest cavity as demonstrated by x-ray; in extensive ulceration of the overlying and the adjacent skin. Where the metastasis, as far as one can say, does not involve the entire armpit and it not detected beyond it, the radical operation may be made with safety if the patient's general condition is good, but not otherwise. The most favorable case for the radical operation is when the cancer is confined to the gland, in fact the radical operation cannot be made too early. Where the neoplasm, be it ever so small, is removed and examined by the eye and frozen section with affirmative results, the radical operation should be made at once. To wait and make the operation a few days later is not to the best interests of the patient.

The Handley operation removing with both pectoral muscles as much of the deep fascia as possible, is the operation of choice. In making the extensive dissection the tissues should be handled with the greatest gentleness otherwise dissemination is likely. It is essential to work with keen edged knives, difficult to have I admit, in this day when real instrument makers are fast disappearing—another instance of machine-power overcoming man-power.

In the advanced cases where the radical operation is not to be considered, removal of the breast with the pectoral fascia, and careful removal of the enlarged axillary glands is best.

In cleaning the axilla, too extensive work is likely to be followed by immediate swelling of the arm due to injury of the lymphatic vessels, a condition that will leave the patient more uncomfortable than before operation. This is a point to be carefully considered. The inoperable cases can best be treated by x-ray and radium. The latter treatment in early cases I consider not only inadvisable but injurious.

Withering scirrhous carcinoma in elderly women, of two or more years' duration, in the absence of pain is I think better left alone. In ulcerative and bleeding carcinoma with few exceptions even in the advanced case, removal of the breast is proper.

Swelling of the arm is seen as one of three types. The simplest, therefore the least discomforting, is where there is swelling of inner aspect of the arm immediately above the internal condyle. The second type is very discomforting but not so serious as the last type and is due to lymphatic obstruction. It is made less uncomfortable by gentle massage, baking and during the day wearing an armlet. The third type is due to obstruction of the axillary vein by recurrent carcinoma. These are pitiful cases, and it is useless to make a new shoulder-joint as advised by some surgeons. The chief thing in the post-operative treatment is to encourage movement of the extremity almost immediately. If the patient has the fortitude to persevere in this, an arm as useful as before operation

can be expected. I am insistent upon this, and find that with the proper diplomacy it can be done in spite of the pain it may cause.

Recurrent masses as I have already said are best treated by x-ray therapy, and usually satisfactorily so, if the patient is fortunate enough to fall into the hands of a skillful and experienced roentgenologist, some of whom are frequently referred to as a Wizard. The successful roentgenologist must possess courage, gentleness, patience and perseverence; this applies to the surgeon as well.

Be it understood that the surgeon's work is not finished when the operation is completed. The after-care calls for masterly attention of the patient, which means observing every detail. Every operative case presents three stages,—before, during, and after the operation. The first is the most important stage, the third the next important, and the second the least important, yet nothing must be left undone for the betterment of the patient.

The rapidity of growth and direction of growth depend upon conditions both local and general. When cancer occurs in the breast of the young lactating woman carcinomatous mastitis progresses so rapidly as to resemble an acute process, and destroys the patient in the course of a few weeks.

INFANT FEEDING IN RELATION TO DISEASES AT ALL AGES*

By A. A. SHAWKEY, M. D.
Charleston, W. Va.

IN SELECTING this subject I realize that it is one upon which little or no absolutely scientific proof can be brought to bear, and especially is this true in the broader application of the subject in which I mean to discuss it. My subject might be more properly expressed as Bad Feeding in Infancy and Early Childhood as a cause of all Diseases at all Ages.

What do we mean by good feeding and by bad feeding? Of course the ideal feeding for the infant is breast feeding, but breast feeding of itself does not necessarily constitute good feeding.

Breast feeding by healthy mothers, at proper intervals, of proper duration, at regular hours (and this means the same hours every day), and not continue beyond a proper number of months, with mother's milk of a composition within the range of normal is good feeding- is perfect feeding, assuming, of course, proper care as to the cleanliness of the mothers nipples, etc.

It is rare, indeed, that mother's milk is not good milk. As a rule the poorest breast milk is better than the best substitute food. Not infrequently, however, there is an excessive amount of fat in breast milk, especially in robust young mothers during the early weeks of lactation. This is usually a temporary condition but causes discomfort and colic while it lasts. A little sterile water given immediately before each feeding will give relief.

Water should not be given at any other time. Milk is eighty-seven to eighty-nine per cent water. Figure the enormous amount of water in proportion to its weight that the baby gets in its food.

Baby B presents an illustrative case. Eight weeks old. Cries all the time. Sleeps very little. Breast fed at irregular intervals, varying from one-half to four hours, both day and night; and as long as it wants to nurse. Has a small umbilical hernia and the doctor told her to let the baby nurse whenever it wanted to, to keep it from crying, because of the hernia. Baby constipated and the mother had been told to eat lots of pickles to make the baby's bowels move. Stools contained green mucus and curds. Baby vomits a large amount several times a day. The baby got four ounces of

*Read before the Fayette County Medical Society, Mt. Hope, W. Va., April 12, 1927.

breast milk in a ten minute nursing, and a sample of the milk taken during the nursing contained six and forty-three one hundreds per cent of fat. Regular ten-minute nursings at three hour intervals with three or four teaspoonfuls of sterile water immediately before each feeding gave prompt relief.

Where breast milk is not available, a formula of proper ingredients, in proper proportions, and fed in proper amounts, at proper intervals may be good feeding.

Any variation from the rules for good feeding is bad feeding; nursing too long at a time, too often, irregularly, after the proper age for weaning, beginning other foods than milk too early or too late. In older children, feeding between meals, candy and other sweets, soft drinks, "hot dogs", peanuts, popcorn, cracker jack and a host of junk so commonly consumed by children, all come under the category of bad feeding.

In a recent survey of a thousand case histories taken at random from my office files, seven hundred and seventy-six cases, or twenty-six and six tenths per cent, showed errors in feeding as a partial if not the sole cause of the illness.

It is not within the span of one's professional life or the range of his ability to follow any large number of cases "from the cradle to the grave," and analyze all the data relating to them, yet that would be the only way in which exact scientific knowledge could be brought to bear upon our subject. So I must be content to try my case upon almost purely circumstantial evidence. However after years of experience, observation and study I am so thoroughly convinced of the importance of the subject that I am sure it is well worth our time and study.

The experience of our army with its volunteers and draftees in the recent war is a subject that is almost threadbare, but it is so pertinent to our subject that it is worth repeating again. Thirty-five per cent of our young men, the pick of the whole country, at the most virile age, two millions in all, failed to pass the examination for admission to the army. In the opinion of Dr. Harvey Wiley, seventy-five per cent of these or a million and a half, failed to pass this examination because of improper feeding in infancy and early childhood. If seventy-five per cent of our finest young men were "unfit" because of improper feeding in infancy, what would the percentage be if we included all ages and all conditions? It staggers one to think of it. Dr. Wiley also said that "You can weaken a child for the rest of its life by the kind of food you give it during its first year."

In a paper on "Under Nutrition in Older Children," read at the recent meeting of the Southern Medical Association, Dr. Lawrence T. Royster, University of Virginia, said: "Recently on what has been done with the human growing organism, there has been found * * * * that when malnutrition was started in early life the symptoms persisted for several generations. The cells did not take in their proper amount of nourishment'.'

The late Dr. Coyt said "You cannot tell how well a baby has been fed until it is thirty years old."

Dr. Moore of Portland, Oregon, says: "The lack of breast milk causes many of the imperfections of adult life, and is manifest in bony, muscular, and nervous tissues."

Dr. King of London, says: "Breast feeding will prevent more insanity than can be cured by all the insane asylums in the world."

The testimony of Sir Arbuthnot Lane, the great English surgeon, is that "the legs of the English girls are ugly because of improper feeding in infancy." He refers of course to rachitic bow legs and knock-knees.

Seventy-eight per cent of all cases of spasmophilia occur in children fed on artificial foods, while only two per cent occur in breast fed children. Diet is a large factor in the cause of rachitic flat pelvis which in turn is responsible for so many still births, and so many mental and physical deformities that are much worse than still births, and which are the end results of birth trauma. The Harvard Medical School has demonstrated that all emaciated infants are tubercular.

I have no tabulated records but after much thought and study on the subject have estimated that about ninety-five per cent of

all children that become very ill or that die from any cause whatsoever are children which have been improperly fed. This is certainly food for very serious thought.

German studies indicate that the wartime under feeding resulted in an actual lowering of mental efficiency.

A colleague reports an epidemic of dysentery in a coal mining town. Not ALL of the artificially fed babies had dysentery, and some of the breast fed babies had dysentery, but all the deaths were in children that had been artificially fed.

I recall an unusually fine baby, nine months old, breast fed at irregular intervals, varying from two to four hours, with one or two night feedings. Was also given cereals, mashed potatoes, fried eggs, dried beans, lemon and ginger snaps, and had apples to gnaw at. The mother was one of twins, breast fed for a time, then bottle; and always whenever she wanted it. The baby had meningitis. Spinal fluid contained streptococci, pneumococci, and diptheria bacilli. Of course we cannot prove that improper feeding of mother and child acted as contributing factors in the cause of this illness and death, through lowered physiological resistance to the invasion of disease germs.

My attention was recently called to Roy L., age eighteen years. Normal birth, and an unusually fine baby up to nine months. Breast fed at irregular and too frequent intervals. At nine months had a severe convulsion of gastro-intestinal origin. Since then has been an epileptic, growing progressively worse, and with a hopeless prognosis. Cases like this are all too common and too well known to all of us.

Baby F.—Breast fed for eight or ten months, then the bottle, both irregularly, and fed between times. Took influenza, so mild that a wrong diagnosis was made by two physicians. Developed pneumonia and empyema. Resection. Recovery. Why such complications in so mild a case?

Mrs. S.—One of four children, always fed what they wanted and whenever they wanted it, "and it did not hurt them any." All four are living. Mrs. S. has had three children. One died at one year of convulsions. One at one year of meningitis. The other is living, two and a half years of age, but is a hydrocephalic. These babies were all fed irregularly, at two-hour intervals. The mother's blood Wassermann was negative.

A family of three children with which I have had intimate acquaintance from birth. The oldest was bottle fed and apparently did exceptionally well after a few weeks. She is now an unusually fine specimen of young womanhood, but has had every disease that has come along, including diphtheria, scarlatina, appendicitis and a Lane's kink. The other two children were breast fed at regular intervals and have had only a few of the minor diseases of childhood.

A mother said to me: "I have four children and I always let them nurse whenever they wanted to and it never hurt them any." A moment later the father said: "We have one boy that never has been well. He is always thin and skinny, never feels well and gets every disease that he comes in contact with." Yet "it never hurt them any."

Another woman severely criticised her daughter-in-law for having weaned her child from the breast at two and a half years of age. She said: "I had ten children and I know all about them. I always let them nurse until they were three and four years old and whenever they wanted to and it never hurt them any." When asked how many of her children were living she dropped her head in shame and replied "three.' Improper feeding "did not hurt them any" but she raised three out of ten children.

Alex. S.—Three years old. Seen recently in consultation. Had a myocarditis following diphtheria. Was thin, frail, undernourished, no appetite, bad disposition, unhappy. Had always been allowed large amounts of candy, soft drinks, hot dogs, and junk of all kinds. It was impossible to stimulate an appetite and if food was forced it would be vomited. Death was due very largely to improper feeding all his life.

Arnold M. presents a different picture as does Charles F.

Arnold M.—Six years old. Breast fed at

regular intervals until nine months of age. Meningicoccus meningitis. Nineteen spinal punctures. Fifteen doses of antimeningicoccus serum totaling four hundred and five c.c. Complete recovery. No trained care. Nursed only by the mother who had fed him properly in infancy.

Charles P.—Five years old. Breast fed and properly fed all his life. Contracted scarlatina. Father was a reader of McFadden's Physical Culture, and refused the use of antitoxin. A week later the child developed otitis media, nephritis, and endocarditis. Antitoxin used. Prompt and complete recovery. This speaks well for both the efficiency of the antitoxin and the recuperative powers of a properly fed child.

General Pershing has said that the physical condition of a high percentage of young Americans is a disgrace to any nation.

Look at the drooping shoulders, the hollow chests, the protruding abdomens of our men. A group of men on a bathing beach look more like a lot of giant bullfrogs than like a group of normal men.

These deformities with their underfunctioning organs are due very largely to bad dietetic habits, not only now but from infancy up, and to what extent they contribute to all the ill-health of advanced years can only be guessed at. These defects exist not only in America but elsewhere as noted by Dr. Irving Fisher, who says that "Both in England and United States the World war disclosed unsuspected defects."

The medical director of an old line insurance company, tells me that while a larger number of persons are living up to an insurable age the death rate above forty years is increasing—from the degenerative diseases.

The death rate from diabetes in the registration area of the United States in 1924 was 16.6 per 100,000 of population. About three hundred fifty or more in West Virginia. The incidence of diabetes has greatly increased, and at the same time that the enormous over-consumption of candy and other sweets in early life has increased. While no accurate information is available as to the number of cases of cancer, tuberculosis, diabetes, heart and kidney diseases that exist in the United States at any given time, it is estimated that there are one million cases of diabetes, one million cases of tuberculosis, and two million cases of heart disease.

The number of deaths reported in West Virginia, in 1925, from certain selected causes are as follows:

Tuberculosis (all forms) 1,257 deaths, or 76.8 per 100,000 of population.

Cancer (malignant tumors) 881 deaths, or 53.8 per 100,000 of population.

Diabetes, 142 deaths, or 8.7 per 100,000 of population.

Nephritis, 1,066 deaths, or 65.1 per 100,000 of population.

Heart disease, 1,745 deaths, or 106.6 per 100,000 of population.

We cannot prove that dietetic errors in infancy and early childhood contributed any part either great or small to the cause of these diseases, but we are fully convinced that they do contribute a part and a very large part to the cause of all the degenerative diseases of advanced life.

Over feeding in infancy is worse than underfeeding. We have often heard it said that "It takes a lean hound for a long chase." A fat horse never wins a race. Athletes and prize-fighters always train down. Everybody is reducing these days, and they all say they feel and are better for it.

I recall an unusual baby seen in consultation. Ten months old, breast fed, nursed as long and as often as it wanted to—at intervals of from one-half to two hours both day and night; weighed thirty-eight pounds. I never saw parents so proud of a baby. It took dystenteric enteritis, lost ten pounds in eight days and died a few days later, giving no response to any method of treatment whatever.

By way of some simple rules for infant feeding: From birth to four months of age three-hour intervals one feeding in the middle of the night, seven feedings in twenty-four hours. After four months, four-hour intervals, five feedings in twenty-four hours; no night feedings. Always the same hours every day. Nothing between meals—

except orange juice, tomato juice and scraped fruits as indicated.

A breast baby normally nurses forty per cent of its food in two minutes, sixty to sixty-five per cent in four minutes, eighty or eighty-five per cent in six minutes and practically all of it in eight minutes; therefore ten minutes is the proper duration of the normal breast feeding, with but few exceptions.

Normally the nursing mother retains the quantity and quality of breast milk up to about the ninth month. To me this is the voice of Nature saying, begin other foods in addition to milk, either breast or bottle, at about the ninth month. There are exceptions, but I think it is a mistake, as a rule to begin cereals, vegetables, etc. at the fifth or sixth month. We see a considerable number of babies that have been given these foods in the earlier months and have done wonderfully well on them, for a time, but sooner or later they lose their appetites, then lose weight, and for weeks and months cause no end of trouble and anxiety before they can be gotten to eat well or to gain properly again. In the United States more than a quarter of a million babies under one year of age die annually. Pediatrists agree that at least one-half of these could be saved by proper feeding.

Surely such facts should give us pause, and cause each of us to determine positively to put forth greater effort to stay this tide of infant mortality, by doing our utmost toward proper care and feeding of our little patients.

ROENTGEN RAY DIAGNOSIS OF DISEASES OF THE GASTRO-INTESTINAL TRACT *

By J. T. McKINNEY, M. D.
Roanoke, Va.

IT is impossible in this short paper to more than briefly mention some of the commoner lesions that can be revealed by a Roentgen Ray study of the gastro-intestinal tract. The Roentgenologist, if he recognizes in the truest sense of the word that he is a physician practicing Roentgenology, and as such a consultant, rather than a mere technician, will place his work upon the high plane to which it rightly belongs. Recent developments with constantly improved technique have opened up a wonderful new field of investigation, especially in diseases of the gall-bladder. There is no field of work that requires or demands more ingenuity, experience and skill, than in studying diseases of the gastro-intestinal tract. That there are many pitfalls and misinterpretations of findings must ever be recognized. However, the vast number of correct Roentgen ray diagnosis, confirmed by operative findings and post-mortem examinations, presents a mass of incontrovertible evidence as to the importance of this procedure.

Probably no greater tribute has been lavished on any medical specialty than that paid by Sir Berkeley Moynihan, the great English surgeon, in "The Mackenzie Davidson Memorial Lecture on the Relationship of Radiology and Surgery," delivered before the International Congress of Radiology, July 3rd, 1925. He says in part: "In connection with gastric disease it is hardly too much to say that we owe almost everything to the radiologist. As we look back upon the history of gastric ulcer in respect to its symptoms, its diagnosis and its treatment, we must now realize that before the radiologist came to the rescue there was little that could meet with our confident acceptance. I do not doubt that more errors have been made in the diagnosis of gastric ulcer than of any other disorder. Its symptoms are mimicked with so much accuracy by other diseases that it is not only the unwary who are deceived. The radiologist has put all this right, or nearly right, and has, I think, explained the cause of the so remark-

*Read at the meeting of the Mercer County Medical Society, Bluefield, W. Va., March 31, 1927.

able plagiarism by those other diseases which arouse gastric symptoms. If the diagnosis of ulcer is made by no matter whom, let us agree that it is not to be acted upon by the therapeutist with drugs or weapons unless the radiologist confirms it. It is admittedly true that this expert may sometimes fail to see an ulcer which is undoubtedly present, especially if he is hurried in his examination by the importunity of the physician or the impatience of the sufferer himself. But, given a good chance, his errors will be few, far fewer than those of any other investigator. And it must be conceded by us all that the value of any treatment—dietetic, medicinal, or operative—cannot be gauged unless we know the precise condition for which that treatment has been prescribed.

We are able to visualize the esophagus, stomach and intestines by employing what is termed the barium meal, consisting of a mixture of 14 oz. of barium and buttermilk. The patient is given a purge the night before and is asked to report for examination in the morning without any breakfast or food. It is important that all hooks and eyes, buttons, and corsets be removed.

No examination is complete without the most careful fluoroscopic studies, with a vertical and horizontal fluoroscope. The examiner should remain in the fluoroscopic room, preferably lighted by a dark blue light, at least 10 to 15 minutes before beginning the examination, and until thorough accommodation has been obtained. A fluoroscopic study of the thorax and preliminary survey of the abdomen should be made in all cases, and if examination of the gall-bladder is to be included, preliminary plates of this region should be taken before any mixture of the barium is swallowed.

The patient is instructed to drink the barium mixture, which should be carefully followed through the esophagus, into the stomach and intestines. Observations are again made six hours later, no food being allowed in the interval, particular attention being paid to the emptying time of the stomach. The patient is now allowed food, but requested to return the next day for a twenty-four hour examination, and when indicated a thirty-six and forty-eight hour study, special observation of the cecum, appendix and colon being made at this time.

The colon is also studied by means of the barium enema, consisting of a mixture of 240 grms, of barium sulphate suspended in malted or sweet milk and mucilage of acacia, the total amount being two quarts. The clyasma should be allowed to flow slowly into the colon, watching it under fluoroscopic control.

Further studies of the gastro-intestinal tract are carried out by means of pneumoperitoneum, or injection of air into the peritoneal cavity. This method is especially applicable in determining the presence of tumors, inflammatory masses, and adhesions to the abdominal wall and other viscera. However, its employment on account of the discomfort to the average patient has not come into general usage, and the procedure is not used as frequently as it was a few years ago.

The lesions most commonly found in the esophagus are foreign bodies, of all types and descriptions, especially when encountered in children, cardio-spasm, diverticula, constrictions and neoplasms. Their differential diagnosis by means of the x-ray, while at times very difficult, usually can be made with accuracy and precision.

The filling defect of a neoplasm or cancer of the esophagus is ragged, irregular and presents a moth eaten appearance, while that of a cardio-spasm is usually conical, smooth, and somewhat funnel shaped. In cardiospasm the esophagus is very large, dilated and shows marked anti-peristalsis, with an easy tolerance for food. The opaque mixture in cancer shows little if any distention, definite intolerance of food and incomplete obstruction.

The stomach presents such a wide variety of shapes, positions, degrees of persistalsis, motility, emptying time, and deformities, that most painstaking observations must be made and careful conclusions deducted. Gastric ulcer and gastric cancer are the two most frequently found conditions, and can with reasonable care be made out by Roentgen ray signs in the vast majority of instances. The

x-ray evidence noted may be an irregularity in the contour of the lumen of the walls of the stomach, the presence of a niche, and filling defects, associated with or without changes in peristalsis, emptying time, and the presence of partial or complete stenosis.

Pylorospasms and spasm of the stomach below the ulcer crater are most confusing and at times simulate gastric cancer very closely. The administration of belladonna or atropine for several days and a re-examination is of great value in such cases, and should always be done. The amount of involvement and location of the lesion noted in cancer of the stomach, while not always reliable as to the full extent of the invasion of the tumor growth, is one of our best pre-operative guides as to the operability, and possibility of resection, or plastic work on the stomach. Careful re-examinations and Roentgen ray studies of the resected stomach and gastro-enterostomies give valuable data and information as to the progress of the patient's condition.

Benign Neoplasms, syphilis of the stomach, phytobezoars, and hair ball stomach are other rare conditions that may be encountered and recognized by means of the x-ray.

Duodenal ulcer, by far the most common lesion encountered, probably five to ten duodenal ulcers being found to one gastric ulcer, shows definite irregularities in the contour and filling appearance of the duodenal bulb. The niche, though not as commonly found as in gastric ulcer is pathogonomic when detected. Duodenal ulcer is usually associated with a hyper-peristalsis and hyper-motility in the stomach. The late lamented Russell Carman of the Mayo Clinic, the greatest authority of his day on Roentgen ray diagnosis of gastro-intestinal diseases, and whose untimely death a few months ago shocked the medical world, states that about 95 per cent of duodenal ulcers and 90 per cent of cancers of the colon show Roentgen ray signs of a lesion. In a recent article just published by Drs. Carman and Sutherland the records of the Mayo Clinic for the past several years show that among each 100 cases of gastric or duodenal disease, the incident of duodenal ulcer is 56 cases, gastric ulcer 6, gastric and duodenal ulcer 1, and gastric cancer 12.

Extra gastric tumors, cancer of the pancreas, gall bladder and liver, and mesentery, may or may not show indirect Roentgen ray signs of their presence. Cancer of the small and large bowel are diagnosed by the filling defect, irregularities in lumen and obstructive signs.

Diverticulitis presents a typical picture of small teat-like projections, or pouches filled with barium extending outward from the walls of the intestines, and are seen both by means of the barium enema and following the barium meal. I believe this condition is frequently overlooked.

Megacolon, which is usually congenital in origin, shows up as an enormous dilatation and redundancy of the colon. Ulcerative colitis presents a characteristic obliteration of the haustra. Intestinal tuberculosis usually involves the cecum and ascending colon and is characterized by failure to completely fill out the cecum with the opaque mixture, associated with a rapid hyper-motility and hyper-peristalsis.

There is a wide divergence of opinion in regard to the appendix. However, if the appendix fills with barium, shows constricted bands, the barium remaining in the appendix over a period of time from 30 to 48 hours, and definite tenderness is noted upon deep palpation, a diagnosis of chronic or subacute appendicitis can be made. In many instances the appendix does not fill with the opaque mixture, but if the cecum is not mobile, and there is an associated definite stasis, with marked tenderness, involvement of the appendix is to be assumed, if the clinical history and findings suggest pathology in the lower right quadrant, and other pathological lesions have been excluded.

Many gall-stones cast no shadow upon the x-ray film, but the almost universal use of the Bucky diaphragm with double screens and duplitized films, have made it possible to visualize a much larger proportion of biliary calculi than formerly. Of the few outstanding advances in medical diagnosis in the last few years, the epoch-making discovery and development of cholecystography by Evarts

Graham and his co-workers stands pre-eminent. This method has made it possible to visualize the gall-bladder on the x-ray film, with almost as much accuracy as the barium meal outlines the stomach. The method as now generally employed, consists in giving, the night before, from 40 to 60 grs. of the sodium salt of tetraiodophenolphthalein in enteric pills or plain double gelatin capsules, 5 grs. to the capsule. Plenty of water should be drunk with each dose, and the patient instructed to sleep on the right side. The following morning the patient reports for x-ray studies, it being most important to withhold all food until the 12 and 15 hour films are taken, after which a meal consisting largely of fats and cream should be given and further plates made. The normal gall-bladder should show a clear cut, definite, dense shadow, which is seen to become much less dense after the ingestion of food, and usually much smaller in size at the successive examinations. Failure of the gall bladder to concentrate the dye may mean, among many other causes, serious disturbance of the liver function, blockage of the cystic duct, or a definitely diseased gall-bladder mucosa. Time will not permit further discussion of this most interesting new work. It is sufficient to say that this new method has proven to be accurate in from 90 to 95 per cent of cases, as checked by operative findings, and that is of great value, particularly in chronic and obscure cases, in determining the function of the gall bladder and liver.

Valuable lessons both to the surgeon and clinician are to be learned from the occasional cases operated on with the removal of the appendix and gall-bladder, which are seen to return later for relief, complaining of the same symptoms. With a more complete examination and study of these cases, frequently a renal calculus, pyo- or hydronephrosis, or stricture of the ureter will be found to be the trouble. Also cases of toxic goiter, or pulmonary tuberculosis, often manifested by gastro-intestinal symptoms should not be overlooked. It is in such cases, as in all of his other work, that the radiologist should use every resource at his command to aid the clinician in making a proper diagnosis. Though it is manifestly impossible to make a complete, painstaking and careful examination of all patients, especially in acute abdominal conditions, every patient with chronic digestive disturbances should have the benefit of thorough Roentgen ray studies, including cholecystography or pyelography when indicated. All the clinical and laboratory findings should then be correlated before operative procedure is advised.

I recall one case in particular in which the appendix had been removed without relief. An x-ray examination by another observer disclosed a shadow which was thought to be a gall-stone. However by a combined study including pylography and cholecystography we were of the opinion that this was a stone in the cortex of the kidney. Six months later a calculus in the renal cortex was removed at operation, all the patient's symptoms completely clearing up.

Report of case of Mr. J. C. Hopkins:

X-ray examination of gastro-intestinal tract with barium meal showed a ptosis of the stomach, the lower border of the greater curvatures extending about three inches below the crest of the ilium in the standing posture. Hyper-peristalsis and hyper-motility noted. An area of lessened density about the size of a lemon and having the appearance of a large air or gas bubble was seen in the stomach. This area was not coated with the barium mixture, and was seen to change its position by manipulation of the stomach. Six hours examination showed about one-fourth of the barium meal remaining in the stomach, surrounding but not coating over the area of lessened density described above.

Re-examination of this patient three days later showed no change in the Roentgen ray findings. The area of lessened density was still present in the stomach, was freely movable during fluoroscopic examination, and was coated over with the barium mixture. Six-hour examination again showed a retention of the barium meal in the stomach, enveloping the apparent air bubble, or area of lessened density.

Our conclusions were that this area of lessened density noted at the two x-ray examina-

tions was due to a mass of foreign material in the stomach, and interpreted in the light of the clinical history was most probably a ball or mass of persimmons, and operation was advised.

Since the final diagnosis of the rare condition depends upon the x-ray examination, great care should be exercised in giving a positive opinion. The Phytobezoa Virginiana may be confused with hair balls or other bezoars in the stomach, and from the roentgenological standpoint it is difficult to differentiate these allied conditions. A careful and painstaking clinical history is of the utmost importance.

In the bezoars the Roentgen ray appearance of the gastric contour and silhouette usually will be regular and smooth in outline, though the area occupied by the mass will be freely movable under fluoroscopic examination, and will give either the appearance of an air or gas bubble, or will be faintly and diffusely shadowed with the barium mixture.

The following should be differentiated: Benign tumors of the stomach, the pedunculated type forming polypi, are especially apt to be confusing, but these should not be as freely movable or have as wide a range of motion as the Bezoars. Gastric cancer on the other hand usually gives a definite filling defect and irregularity, the affected area of which is seen ordinarily invading and involving the gastric wall and lumen. This defect is constant and fixed and there is an absence of peristalsis in the involved area.

Apparent filling defects, if plates alone are relied upon, may be confusing, these defects resulting from faulty media, in which the barium is not well mixed, excessive secretions in the stomach, gas in the colon, pressure of the stomach against the spine, spasm, extrinsic abdominal tumors and many other conditions. However, with a careful fluoroscopic study combined with serial plates, and a well taken clinical history, an accurate, preoperative diagnosis should be made.

SYMPTOMS OF SINUS INFECTIONS *

By F. T. SCANLON, M. D.
Morgantown, W. Va.

HEAD PAINS resulting from sinus diseases are the most frequent and least understood of the entire symptom complex. While one may not be able to diagnose a sinusitis by pain alone—taken with other clinical signs the diagnosis is often made comparatively easy. The absence of pain may sometimes mean that the secretions are not confined within the sinus, or that the inflammation has not spread to some sensory nerve or ganglion.

Frequently patients simply complain of a general headache and I am always sorry when a patient begins with that, or a similar statement, for I know very well that it will require close and careful questioning to place the cause on some definite sinus. The fact that we may have a number of sinuses affected at the same time, or some ganglion inflamed by the nearness of some diseased sinus, causes the pain as well as the symptoms to overlap, and an accurate diagnosis is not always possible. A congestive pain is generally easy to differentiate.

For example, pressure of a middle turbinate against the septum, does not cause headache—but the pressure of a deflected septum, which involves the ostium of a sinus lying underneath, will cause pressure pain from a confined discharge.

A condition hard for me to understand, and more difficult to explain is that some cases have little or no pain, yet, show marked tissue changes, while some showing most severe and almost unbearable pain, often are seen when we are unable, from examination to diagnose a sinus disease. There must be some microscopic change to cause the severe

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nerve reactions, and some of our best authorities believe that ganglion inflammation is the probable answer to these sinus pains. Gruenwald claims that in acute sinus inflammation there is always pain—while in chronic inflammation pain is present in not more than half the cases. The character of the pain may be described as the "general headache" which I mentioned before, of a dull, heavy or neuralgic type—which I have no doubt was the neuralgias that our mothers used to have—and had little or no relief because the doctor called it "neuralgia" and that was all there was to it. Most sinus pains are either from a positive or negative pressure—and usually disappear suddenly on release of this pressure. The sudden cessation of pain is markedly characteristic of sinus infection and disease.

The acute paroxysms of a trifacial neuralgia, earache and dental pains are easily diagnosed. The supraorbital, and infraorbital neuralgias are localized and have their tender points and both may be caused by sinus troubles, indirectly. While some individual sinuses seem to show some predilection for referring pain to certain locations, there is no definite location for each sinus. The crossing of sympathetic with sensory nerves complicates this condition.

By way of just mentioning the individual sinuses, first I desire to mention the maxillary. In acute maxillary sinusitis, there will be hard definite pain over the cheek and the affected side, intensified by moving the head forward and downward. There may be also radiating pain in the side of the head and neck from extended inflammation to the nasal ganglion. Pain in the supraorbital region is due undoubtedly to a reflex through the sympathetic and originates in the frontal sinuses.

In frontal sinusitis there is usually a severe and definite pain over the eye of the affected side—sometimes with radiating pain over half of the head. The skin and scalp are tender to light touch—and intense localized fullness with or without pain is felt when the head is leaned forward. If there is a suppurative condition the pain is more severe after one is up and around in the morning—which usually subsides toward noon, or later in the day. This symptom is probably responsible for the condition being commonly known as sun pain.

If only congestion exists the pain will continue until toward night. While in suppuration the pain is entirely relieved at night, on account of the supine position relieving the congestion, by reduced blood pressure, lowered heart action and a decrease in secretion. When a patient is lying down the secretion falls away from the ostium which is located anteriorly and inferiorly and which becomes more patulous, and is affected more favorably by the action of the cilia of the mucous membrane.

When the patient is up and around the pain is increased, because of the weight of the secretion and congestion of the outlet, which is more or less blocked, until after the secretion is partially drained and pressure is relieved.

In the anterior ethmoidal sinusitis there is a dull heavy pain between the eyes and over the bridge of the nose.

In posterior ethmoidal inflammation the principal additional symptom is the feeling that the eyes are being pressed forward.

In sphenoidal suppurative inflammation there is a sense of fullness in the center of the head, which is about the actual location of the sphenoidal sinus.

Pains may also radiate to the top and back of the head and over the ear. In sphenoidal inflammation the nasal ganglion is frequently affected by reason of its anatomical proximity. In this condition pains will extend down the shoulder and arm.

In conclusion I should like to mention the nasal ganglion inflammation because of the possibility of confusing this condition with sinusitis, and this probably because of the nasal ganglion lying as it does between the sphenoid and maxillary sinuses, and too, because of the possible coexistent inflammation of one or both of these sinuses.

The nasal ganglion inflammation may be differentiated from sinusitis by placing a

pledget of cotton saturated with cocaine and adrenalin solution over the spheno-palatine foramen which is located at the posterior end of the middle turbinate.

The pain is generally relieved in ten to fifteen minutes. As stated at the beginning, it is really surprising how confusing all or any of these pains are to the patient but careful questioning and examination generally elicits enough information, so that with the clinical evidence a fairly definite diagnosis can be made.

HYPERTENSION *

By P. R. Fox, M. D.
McComas, W. Va.

PERSISTENT hypertension is a pathological condition, of the treatment of which the last word has not been said, but discussing such a subject should be interesting, because, if it is incurable in its more malignant forms, so much more ought emphasis be placed upon preventative measures and treatment in the earlier stages. Certainly to a more or less degree it is progressive in its course and, as in many other pathological conditions, a good prognosis depends largely upon an early diagnosis. I hope therefore by giving the subject a brief review, interest will be stimulated which will inhibit to some degree the patronage of this avenue by which so many have "shuffled off this mortal coil."

Apparently the theories which have been advanced to explain high blood pressure have not been very satisfactory. There seems however to be in the blood stream something which either acts upon the vasomotor center in the brain or else upon the capillary walls or muscle cells of the arterioles, which stimulates a constriction. Since a certain amount of blood supply is essential to the well being of the individual, physiologically the heart increases its pumping activity and hence an increase in pressure. With more work placed upon this organ it hypertrophies to meet the demands required of it and consequently there is a lengthening and enlargement of the fibres together with an increase in size of the left ventricle. As the heart becomes enlarged there is a lack of nutrition to the muscles and a formation of connective tissue which is a predisposing factor of weakness in a later stage. In the arteries fibrous tissue takes the place of the elastic fibres of the media, thus forming a rigid tube for the transmission of the blood depriving the arteries of that elasticity of normal health which helps to such a degree to preserve the circulation.

From the standpoint of the patient the main issues at stake are the determination and elimination of the cause. Arthur N. Donaldson after a discourse on "The Relation of Protein Foods to Hypertension," ends by saying "The results of the study support the suggestion that hypertension may have its beginning in a type of dietary that produces such a degree of endocrine stimulation as to develop an irritable vasomotor system with its resulting transitory, then permanent alteration in blood pressure." But whatever the exact toxin or irritant which causes the vessel walls to be constricted, there are certain definite abnormal conditions which are closely associated with, and which seem to lead up to hypertension.

Different authors have different ways of classifying the subject. Martinet makes four divisions. First are the plethoric cases characterized by a simple vascular turgescence and excessive blood supply. The gouty, the diabetic and the obese patients also fall into this group. The causes given for these are inheritance of a similar state, overeating and a sedentary mode of living. The second division is the angiospastic cases, those in which there is an excessive neurovascular irritability or sensibility, and those with undue emotional tendency to become excited, caused by a neurotic heredity, overstrain, insomnia and certain forms of

*Read at the meeting of the Mercer County Medical Society, Bluefield, W. Va., June 16, 1927.

poisoning as that of lead and nicotine. The nephritic type of hypertension constitutes the third group, caused by infections in the acute form and sclerosis in the chronic form. The last group or the arteriosclerotic cases may be considered the end results of the three preceding groups together with senile degeneration. The cause given for this last type are auto- or exogenous intoxication, infections such as malaria, syphilis and typhoid fever, and senility.

Tice makes a different classification and gives a subacute form and three groups of the chronic form such as chronic nephritis, essential hypertension and arteriosclerotic high tension.

The subacute form consists of that type which occurs in pregnancy, eclampsia, focal infections, exophthalmic goiter and neurotic states where the pressure is high for a time but which adjusts itself upon removal of the cause.

The chronic nephritic cases are those with both the systolic and diastolic pressure considerably elevated, together with a markedly increased pulse pressure. Being more pronounced in the morning the lower eyelids show a puffiness. Those arteries which are palpable appear hard and fibrous to the touch. There is polyuria, nocturia, the urine contains almost constant traces of albumin, and hyalin and fine granular casts are present. The kidneys are much below normal as to their function and may advance to a stage of complete suppression. The outlook for these cases is either uremia or cardiac decompensation with the exception of an occasional cerebral complication.

The second group of the chronic type is called essential hypertension or those cases of hereditary nature. They are apparently healthy, robust people and may even boast of never having had medical attention. The blood pressure runs very high while there is moderate increase in pulse pressure. Usually swelling under the eyes, polyuria and nocturia are lacking, while the specific gravity, color and amount of urine are normal. There is little or no albumin though a few hyalin casts may be found if the specimen is centrifuged, and the kidney function is but slightly reduced. This is the group that apoplexy visits most often and comes when the person is in apparently perfect health. If the patient survives the attack the chances are that he will be a victim of cardiac decompensation later.

The arteriosclerotic high tension cases are those who usually have passed the age of fifty and whose lives have been mentally and physically, strenuous and dissipated. While these people are inclined to be stout and apparently well nourished, their past history may reveal excessive mental strain. Active athletics or moderately heavy drinking. The systolic pressure is high, while the diastolic pressure is elevated only slightly, thereby giving an increased pulse pressure. In this group the kidneys seem not to be very seriously impaired, and the end results of the greater number of these patients is a cardiac decompensation with acute dilatation.

Cardiorenal disease is the term which may be applied to those cases of nephritis of the chronic interstitial type where the heart can no longer maintain the needful hypertension, and decompensation results. The cardiac symptoms stand out most prominently in this variety of patients.

The symptoms of hypertension may be cardiac, renal, gastro-intestinal, nervous or ocular or a combination of two or more of these. The cardiac is manifested in the form of shortness of breath on exertion, swelling of the ankles, cough, attacks of angina, etc. Some of the renal symptoms are nocturnal polyuria, muscular cramps, swelling under the eyes and seizures of a convulsive nature. Discomfort after eating, and flatulence represent the gastro-intestinal group. Nervous symptoms are characterized by an irritable disposition, temporary paralysis, insomnia, etc. Failing vision and hemorrhages of the retina are of the ocular type.

Symptoms however are not necessarily essential for making a diagnosis in this day of the sphygmomanometer and if blood pressures were taken routinely many cases might be discovered in a stage when chances for recovery are good.

The treatment of hypertension may be

classified into two general divisions, preventive and curative.

To prevent high blood pressure it is important to live a life of moderation. The diet should be well balanced and care taken to avoid overeating. Daily evacuation of the bowels to avoid intestinal intoxication and sufficient exercise to prevent an undue amount of adiposity have their places of importance in preventing high blood tension. Another step in this direction is to keep a check on the usual foci of infection that any intoxication arising therefrom may be given due consideration in its infancy. To avoid the loss of sleep and mental strain are not to be passed by unnoticed. The control of heredity is a more difficult problem, being drawn out over a longer period of time, but let it be remembered by those who live in this day, that a sound body and a mind untainted by disease is the greatest heritage which can be passed down to the coming generation.

The curative treatment of hypertension varies according to the different writers; for instance one author "warns against search for and eradication of foci of infection in the belief that high blood pressure is secondary to chronic focal infection" for he says "observations and statistics give no credit to such beliefs," while another writer speaks of removal of foci of infection as being a most important factor and often being neglected. I believe however that preference should be given to the latter view and the teeth, tonsils, sinuses, gall bladder, appendix and prostate may each be considered a possible source of trouble. Drugs seem to be mostly temporary in bringing down the pressure yet one writer has said that "iodide of potassium in small doses over long periods of time improves more cases than any other drug. High frequency current seems to give some relief temporarily, and if used periodically the pressure may be held to a lower average for an extended length of time. Whether there is any permanent relief however is questionable. Diet is important and care should be taken to avoid overeating, and especially to limit proteins. Sweets should be restricted and foods which are highly seasoned should be avoided. Proper care in elimination of excreta from the body is of importance.

Some of the more malignant types of hypertension however seem not to be amenable to medical treatment and men and women still die with uremia, cardiac decompensation and apoplexy. After all the work which has been done along this line there remains much which is as yet unsolved. But in this day of scientific investigation, when sound is caused to travel over the ethereal waves and when men take wing and fly from continent to continent, even the seemingly impossible holds out to the scientific mind a challenge. Moving in that direction in the treatment of hypertension a more radical method has been used in the form of surgery. Since the sympathetic nerve fibrils convey the impulses which stimulate constriction of the blood vessels, to sever these is a problem for experimental investigation. Sympathetic neurectomy has been done at the Mayo Clinic and the report of a case of malignant hypertension is cited where there had been severed the second, third, and fourth lumbar segments of the sympathetic chain together with the ganglia and rami. The report ended by saying, "While the outcome of this operation was not entirely satisfactory, yet there was definite subjective and objective improvement. The patient has worked continuously, and without discomfort since his return home, although he had been entirely incapacitated prior to coming to Rochester." Until the time of this report it was considered not long enough however for ultimate conclusions.

Such work as this stimulates hope that some day methods will be devised for successfully treating and eliminating those conditions which lead up to hypertension and thus push back the limits of the horizon of man's useful day of existence in this life.

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THE FAMILY DOCTOR AND THE CANCER PROBLEM *

By FRANK LEMOYNE HUPP, M. D., SC.D.
Chairman of the West Virginia Branch of the American Society for the Control of Cancer

No apology need be made for borrowing an inspiration from the wisdom of Samuel L. Metcalf, a native of Winchester, Va., who wrote, away back in 1843, in his "Vital Agencies in the Phenomenon of Nature," that the whole object of medical science is to regulate the forces of life, to increase them when they are deficient, to restrain them when excessive, and to restore their natural balance when deranged.

What a debt of gratitude we owe the patient and self sacrificing workers in the medical research laboratories, and how well we know that many of these seekers after truth, have as their goal the restraint of those very forces which, unhampered, lead to that lawless growth and insurrection of body cells that we call cancer, still unconquered, and concerning which the far sighted Metcalf wrote.

The unusual sagacity of the founders of the American Society for the Control of Cancer, leads them to build their very first efforts on the rock of publicity and education, and that fundamental principle has brought tens of thousands of those bearing suspicious lesions to the dispensaries to learn the truth about some innocent pathology or potential malignancies. Opposition and discouragement at first seemed to thwart every forward step, but a small body of determined spirits, with a zeal born of altruism, and lead by the lamented Dr. Charles A. Powers, with their backs to the wall, fought the good fight. Today a philanthropic and educational structure stands on that firm foundation, which under wise generalship is destined for all time to disseminate that which is known to be accurate knowledge, and to confirm and broadcast any scientifically proven facts, to give sound advice regarding the utilization of methods of treatment now available, and to ever engage in the righteous pursuit of more light.

Far too often the incipient cases are turned from the doctor's door with their lesion pronounced innocent, dismissed with a perfunctory warning to forget about the ailment and to return at some future date. What is the picture at the time of that return visit? A sight that might well crush the soul of this irresponsible advisor: inoperable metastases, beginning cachexia, despair, and everywhere written the final step of a "Dance Macabre."

How true it is as Broeman has said that "No society however well organized and efficient, can ever hope to reach the ears of the multitude as surely as the voice of the family doctor, no great specialist can ever hope to see for the first time in his clinic or private office, material that continually comes to the general practitioner as he plods along upon his daily rounds."

It is for the reeducation of the family doctor that this College must strive, it is to place within easy reach of these faithful laborers in the medical vineyard, the modern scientific facts, that this plea is made.

If in the last analysis the help must come from the general practitioner, if upon him lies the responsibility of early diagnosis and the recognition of first warnings, then it is the duty of every teacher of medicine, indeed it is the sacred privilege, as Almighty God has entrusted to your keeping these priceless lives, to keep the faith and to do your part in having these suppliants piloted to a harbour of safety, and with an awakened conscience see that their course is not beset with pitfalls.

Let the family doctor know, as Bloodgood has taught, that of one hundred tumors of the breast coming for examination within one month of their discovery, seventy-five

*Read before the Sectional Convocation of the American College of Surgeons at Washington, D.C., January 18th, 1927.

per cent are not cancer and that the other twenty-five percent of incipient malignancy or border line tumors are almost one hundred per cent curable.

Teach them that incomplete surgery leads to dissemination of the disease and a hundred other well established facts known to be as true as Holy Writ.

Let them definitely know, as my colleague R. J. Reed has so well done, that the challenge with respect to injuries of the birth canal, their resulting scars and potential malignancies, is not to the patient but to the obstetrician.

The family doctor may not be interested in Gye's specific factor contained in tumors, which has the property of reactivating an extract of the Rous' sarcoma, nor is he concerned about whether the agent is a living filterable biologic entity seen or unseen beneath Barnard's super quartz microscope.

Perhaps the family practitioner cares little about that lack of specific knowledge of the protoplasmic organization which has stood in the way of understanding the riotous and lawless cells which lead to the development of a malignant neoplasm.

*Perhaps he will care little about that biochemical attack on the cancer problem developed by Otto Warburg, when he opened the channels for metabolic tests of surviving tissue under varying conditions, and his comparative experimentation on the processes of disintegration, oxidation and asphyxiation of normal tissues and neoplasms.

It is the practical rather than the complex problems which enlist his attention. But certainly he will be deeply concerned as we all are, about the statement of facts and opinions, accepted and indorsed by the International Cancer Symposium, held last September at Lake Mohonk. This meeting was under the sponsorship of the American Society for the Control of Cancer and it brought together the eminent specialists, surgeons, radiologists and research workers from Europe, the Dominion of Canada and our own country.

Aside from this meeting serving as a clearing house, it brought out the scientific details of the world's work in the cancer field, emphasizing established facts and definite working opinions on the etiology, early recognition and standardization of the modern methods of relief and cure of the disease.

Two resolutions were unanimously adopted, epochal contributions and far reaching in their effects, and destined to bring the message of hope to those who seem to be predestined to suffer, and at the same time they will broaden the mind and enrich the understanding of the medical man, to whom this plea is made.

The first resolution involves the publication of abstracts from all the important papers prepared by the members of the International Association as well as other authoritative literature.

The second resolution embodied the unanimous endorsement of a series of established basic facts bearing on the present day scientific knowledge of malignancy and which may well serve as a creed for both layman and doctor.

So vitally important are these paragraphs and because cancer is on the increase, Hoffman's figures showing a mortality of as high as one hundred and seventy per one hundred thousand in some of our American cities, it seems fitting and proper that they should be repeated here:

1. The causation of cancer is not completely understood, but it may be accepted that for all practical purposes cancer is not to be looked upon as contagious or infectious.

2. Cancer itself is not hereditary, although a certain predisposition or susceptibility to cancer is apparently transmissible through inheritance. This does not signify that, because one's parent or parents or other members of the family have suffered from cancer, that the disease will necessarily appear in other persons of the same or succeeding generation.

3. The control of cancer, so far as this subject can be understood at the present time, depends upon the employment of measures of personal hygiene and certain preventive and curative measures, the success of which depends upon the intelligent cooperation of the patient and the physician.

(*Foreign News—Cancer Prize Awarded J. A. M. A. 88:110, Jan. 8, 1927.)

4. Persons who have cancer must apply to competent physicians at a sufficiently early stage in the disease, in order to have a fair chance of cure. This applies to all forms of cancer. In some forms early treatment affords the only possibility of cure.

5. Cancer in some parts of the body can be discovered in a very early stage, and if these cases are treated properly the prospect for a permanent cure is good.

6. The cure of cancer depends upon discovering the growth before irreparable injury to a vital part of the body and before it has spread to other parts. Therefore, efforts should be made to improve the methods of diagnosis in these various locations and the treatment of the cancers so discovered.

7. The public must be taught the earliest danger signals of cancer which can be recognized by persons without a special knowledge of the subject, and induced to seek competent medical attention when any of these indications are believed to be present.

8. Practitioners of medicine must keep abreast of the latest advances in the knowledge of malignancy, in order to diagnose as many as possible of the cases of cancer which come to them.

9. Surgeons and radiologists must make constant progress in the refined methods of technic which are necessary for the diagnosis and proper treatment not only of ordinary cases but of more obscure and difficult ones.

10. There is much that medical men can do in the prevention of cancer, in the detection of early cases, in the referring of patients to institutions and specialists who can make the proper diagnosis and apply the proper treatment, when the physicians themselves are unable to accomplish these results. The more efficient the family doctor is, the more ready he is to share responsibility with a specialist.

11. Dentists can help in the control of cancer by informing themselves about the advances in the knowledge of the causes of cancer, especially with relation to the irritations produced by imperfect teeth and improperly fitting dental plates. They can also help by referring cases of cancer which they discover to physicians skilled in the treatment of the disease in this location. It may be doubted whether all dentists fully realize the help which can be obtained from x-ray photographs in revealing not only the state of the teeth but the condition of the bone surrounding them.

12. Medical students should be instructed in this disease by the aid of actual demonstrations of cancer patients, and this to a sufficient extent to give them a good working knowledge of the subject.

13. The most reliable forms of treatment, and, in fact, the only ones justified by experience and observation, depend upon surgery, radium, and x-ray.

14. Emphasis should be placed upon the value of the dissemination of the definite, useful and practical knowledge about cancer, and this knowledge should not be confused nor hidden by what is merely theoretical and experimental.

15. Efforts toward the control of cancer should be made in two principal directions: (1) the promotion of research in order to increase the existing knowledge of the subject, and (2) the practical employment of the information which is at hand. Even with our present knowledge many lives could be saved which are sacrificed by unnecessary delay.

From Dr. George A. Soper comes this forceful personal letter: "There is a wide difference between the information which is possessed by the foremost students of cancer and the rank and file of the profession, and it is of the utmost importance that this difference be lessened. Those who have had opportunities for unusual training and experience in dealing with cancer, and consequently are unusually prepared to diagnose and treat it, should do what is necessary to instruct those who do not happen to be so fortunate. Physicians who have seen relatively few cases should do everything in their power to become conversant with the latest information and opinion which will help them to prevent, diagnose and treat the cases of cancer which come to them."

Another phase of this problem comes to us in a personal communication from Dr. Francis Carter Wood, whose serious and

helpful work at the Institute of Cancer Research of Columbia University is known the world over. Dr. Wood emphasizes the fact that the whole subject is one which is easy to talk about and difficult to execute. He insists that it is a simple matter to tell the general practitioner that he must make an early diagnosis of cancer, and is to be blamed if he does not, but one of the most difficult things to do is to tell the patient whether he or she has or has not an early carcinoma of the stomach; and yet about fifty per cent of the cases of carcinoma occur in this region. In other words, half the diagnoses which we ask the general practitioner to make require large experience and acquaintance with the method of gastric analysis and access to a competent radiologist.

Dr. Wood is convinced that the mere enumeration of these facts illustrates difficulties which we hope a frank discussion will help to eliminate. However it is not easy to see how this is to be met unless our developing system of county and city hospitals will offer to physicians and patients in their region a thorough examination by specialists at a reasonable price. For at present the cost of such expert laboratory and roentgenological service is prohibitive.

After all has been said there seems to be no reasonable excuse why the medical man who first examines the patient bearing a potential malignancy should not be able, at least, to establish a definite suspicion, and to be taught to understand that there is no middle ground or equivocation but that the case is to be referred to the protecting philanthrophy of a modern hospital or clinic where such suspicion may be definitely confirmed or denied.

I am more and more impressed with the importance of standardizing the family doctor and the medical student on the subject of cancer, just as our College has established a code and a creed for the hospital and the surgeon. Let a wise committee of educators publish a bulletion or let it be made a part of the official Journal and presented with a persuasive clarity as convincing and as binding as the Hippocratic Oath.

My humble plea before the Fellows of the American College of Surgeons is that a definite message go out from this convocation urging the clinical professor of surgery, the county, state and national medical associations to fully appreciate the vital importance of the teaching responsibility. May they know and feel and teach as Bloodgood has so faithfully pointed out, that cancer is a disease of ignorance, and that the cure of ignorance is education. May they teach that the permanent relief of this disease is not a drug, nor a serum, nor a ray, nor a miracle. Let every effort be made to unblock and keep clear the channels of understanding, as Richard Cabot would put it. Let it be known and made so plain that he who runs may read, that the trust and responsibility rests upon the shoulders of him who first receives these confiding patients and that his directing influence will determine their fate. And so let us be emancipated from the thraldom with which tradition has fettered our progress. Being ever mindful of the toll and needless sacrifice coming from neglect of duty and ever following the dictum of Habakuk of Holy Writ; "Make it Plain."

By a united effort toward a definite teaching may we not here and now remove the opprobium pronounced by Montague when he said, "I honor the glorious name of medicine, its promises so full of hope to mankind; but for that which is called the art of prescribing and the giving of immature advice, I have no respect whatever."

While no harm may come from the facing of facts, which are a part of every surgeon's experience, and while I am convinced that we should push forward in the tactful education of the layman my plea today, although willing to subject experience to the control of direction and reason, is not to neglect the student of medicine, the nurse or the practicing physician when dispensing truths and endeavoring to get as near to God's secret as possible concerning this cancer juggernaut, which ruthlessly slays one hundred and fifty thousand victims annually in our fair land.

By waging this crusade for right and humanity "we will but uphold the tenets and traditions of our honorable profession."

In answer to many inquqiries concerning the Saunders Cancer Awards, Dr. George A.

Soper, the Director General of the American Society for the Control of Cancer, has suggested that we give the readers of our West Virginia Medical Journal the following data, based upon the letter written by Mr. Saunders and dated December 13, 1926. The proposition has been unreservedly accepted by the American Society:

1. Mr. Saunders will give $50,000 to any person or group of persons who may discover how human cancer can substantially be prevented.

2. Mr. Saunders will give $50,000 to any person or group of persons who may discover a substantial cure for cancer.

3. The term "substantial" is to be interpreted in a practical sense—it is here used to indicate that an uncertain or unreliable result will not be acceptable. To permanently arrest a case is to be regarded as equivalent to curing it. It is not to be expected that the cure will be effective in advanced cases.

4. The entire sum, that is, $100,000, may be given to the same person or group of persons.

5. The decision upon which these awards are made is to be determined by the American Society for the Control of Cancer and approved by the American Medical Association and the American College of Surgeons.

6. The position of the Society is that of adviser to Mr. Saunders. The Society takes no responsibility for the payment of the awards. It is Mr. Saunders, and not the Society, who has offered them.

7. The Society's function in relation to the consideration of claims for the awards is permissive, not mandatory. It may consider any or all claims and do so in such ways as seem to it appropriate. It cannot be compelled to investigate or render a decision in any. It cannot be compelled to reconsider any decision. In the event that the Society recommends a candidate for an award, the reasons for the decision will be transmitted to Mr. Saunders and to the American Medical Association and the American College of Surgeons for such consideration and action as may seem necessary.

8. The preventive measure or cure must forms and locations.

9. All definitions of terms and the interapply to human cancer in substantially all its pretation of all details and conditions established for the investigation and consideration of claims are to be those made by the Society.

10. The Society may make such rules for the examination and consideration of claims as it thinks proper.

11. The Society reserves the right to refuse to consider any and all claims without necessarily giving its reasons for so doing.

12. The duty of proving their claims lies with the applicants for the awards. The American Society for the Control of Cancer may make such investigation into the merits of propositions as it desires, but is not under any obligation in the matter.

13. The Society may recommend that an award be made to one who has not claimed it, if, in the Society's opinion, the facts fully justify this course. The Society may investigate any procedure or cure with a view to its consideration for an award.

14. All propositions must first be submitted to reliable medical or scientific sources before presentation to the American Society for the Control of Cancer.

15. There must be no secrecy about any proposition. Full and explicit information must be furnished unconditionally. The American Society for the Control of Cancer reserves the right to publish any and all propositions submitted.

16. No money will be paid for any information nor will financial aid be granted for researches or other purposes.

17. The preventive measure or cure must be capable of being employed upon a large scale and without excessive cost, pain or inconvenience.

18. Applicants must furnish such information and submit to such tests as the American Society for the Control of Cancer may demand and afford the Society and its representatives such opportunities to make investigations and to observe the rules as the Society may deem necessary.

19. The proposition of Mr. Saunders and its acceptance by the Society will expire February 1, 1928, unless renewed.

ABSTRACTS

Prevention of Sinusitis

There appears in *Southern Medicine and Surgery* of November, 1926, a practical article on Acute Sinusitis, by Dr. Louis West of Raleigh, which is well worth reading by both the general practitioner and the specialist. In the article he stresses the prevention of sinusitis as far more important than the treatment. In cases presenting common colds, too often the physician allows the condition to run unattended, while attention to proper drainage of the nasal passages and employment of means to keep the openings into the various sinuses patulent would in most cases prevent collection of material in the sinuses and further involvement there.

It is pointed out that many malformations in the nose cause sinus trouble and correction of these conditions will do much to relieve congestion around the natural ostii of the sinuses.

Needless to say, the physician must be certain of his diagnosis before any operation is done in the nose and physiologically important structures are unnecessarily destroyed in a futile attempt to establish drainage where none is needed.

The author also mentions the prevalence of sinusitis in children and gives adenoids as the most important predisposing factor.

Thus it will readily be seen that if the many conditions are recognized and properly handled a large percentage of sinusitis can be prevented.

V. T. C., Jr.

The Child With Squint

Under "The General Practitioner and the Child with Squint," in the November issue, 1926, of *Southern Medicine and Surgery*, Dr. V. K. Hart gives the family physician several points of advice to the parents of the child.

Three types are mentioned: first the convergent squint of a baby with a high degree of far sightedness, which latter condition has an hereditary tendency. The squint is due to overactivity of the third nerve supplying the Interval Recti and Ciliary muscles, in an effort to accommodate for near subjects.

Secondly, that due to difference in the vision of the eyes.

Thirdly, lack of development of fusion faculty. This being a central defect, well illustrated in hydrocephalics.

By the use of atropin or a patch, in the first two or three years of life, many cases can be greatly helped if not cured. The atropin or patch used on the unsquinty eye seems to put it to rest and force use of the offending eye. After three years or slightly earlier, glasses for correction of visual defects may be employed.

If the above methods do not cure in a year or so, operation in the form of partial tenatomies or advancement of muscles is advised. It must be remembered that binocular vision, ability to use both eyes on one object at the same time, develops in the first six years of life, rarely afterwards.

In summarizing, the author states:

1. These children should be brought under observation of an eye man as soon as strabismus develops.
2. Parents ought to know the child can be improved and possibly cured.
3. The family physician should also emphasize the fact that it may take several years of observation and treatment.

V. T. C., Jr.

Placenta Previa

Prompt diagnosis and prompt treatment, whatever the method, with the individualization of the patient and instant readiness for transfusion, are the salient points of J. Ross McPherson's paper, "The Treatment of Placenta Previa," appearing in the July issue of the *New York State Journal of Medicine*.

The author divides all placenta previa

cases into two classes: the first, those in which there is a viable child; and the second, those in which the child is not viable and need only be considered secondarily. In all cases as to her blood and a satisfactory donor selected and kept immediately available until his or her services are no longer necessary.

If the case presents an undilated or a slightly dilated cervix, is at term or nearly so, offers the best solution of the problem for both the mother and child, whether the mother be a primipara or a multipara.

If on the other hand the child is dead or non-viable, he favors the tightly packing the uterus, the cervix and the vaginal fornices with iodoform gauze strips, the membranes having been ruptured beforehand. Just as soon as dilatation sufficient for extraction of the fetus has been secured, the patient is anesthetized, the packing is removed and the fetus extracted by whatever method the operator desires. The placenta is removed manually after which the uterus is repacked tightly and pituitrin and ergot given as necessary. Avoidance of trauma and adherence to a rigid aseptic technique, with immediate availability of transfusion are naturally essential. W. W. P.

Reabsorption of Pleural Effusions Under Thyroid Extracts

Dr. C. S. Danzer, *Annals of Clinical Medicine*, April, 1927, after reviewing the usual treatments of pleural effusions which he terms as generally vague and numerating the possible sequela of removing the fluid by aspiration, he quotes Eppinger's work on "Edema." "He found that certain cases of cardiac or kidney disease were typified by an enormous generalized edema, that treatment of the heart by digitalis restriction of fluid intake, salt free diet or the administration of diuretics had no effect. In such cases the feeding of thyroid gland produced a marked diuresis, the disappearance of edema and distinct clinical improvement."

Following Eppinger's experimental investigation on animals, it occurred to Danzer that a similar explanation might be given for pleural effusions.

In seven cases reported he gave one-sixth to one-half mgm. thyroxin every 4 hours or 2 to 3 mgm. per day. Complete reabsorption took place in from 4 to 12 days.

He summarizes as follows:

Seven cases of pleural effusion were treated, with thyroxin or desicated thyroid. Three of the cases were of primary tuberculous nature and the remainder occurred in the course of pneumonia. In six cases there resulted a very marked reduction in the quantity of fluid after 4 to 12 days of thyroid feeding.

The parapneumonic effusions reacted better to thyroid than did those of tuberculous origin. It is suggested that thyroxin or active thyroid preparations be given patients with pleural effusions especially where spontaneous reabsorption is delayed.

C. A. R.

Tetanus and Its Treatment

(Ohio State Med. Jour., July, '27)

The importance of active medical treatment along with specific therapy is emphasized. Prognosis is far from hopeless. The wide distribution and many avenues of entrance of the tetanus bacillus require constant watchfulness of all injuries with broken skin. Tetanus is a local infection with a selective toxemia travelling along the nerve sheaths to the higher centers and affecting the motor portions. Wide variations in virulence, no characteristic pathological lesions and no spinal fluid changes.

Prophylactic use of serum is of established value. Early diagnosis, very valuable in successful treatment rests on general nervous irritability with slight stiffness and soreness of the muscles of the back, jaws or neck following any type of injury with broken skin.

Active treatment is divided equally between specific antitoxin administration and the use of sedatives and forced feedings. There is no agreement regarding dosage of antotoxin and the various opinions are stated. Six hundred and twenty-seven

case records (from another clinic) with doses varying from 500 to 100,000 units showed no difference in outcome relative to dosage. The author used in his series a total of from 20,000 to 50,000 units in two or three separate administrations by the three avenues. Heroic sedative medication and forced feeding were emphasized. Chloral and bromides by mouth and magnesium sulphate and morphine subcutaneously were most effective in controlling the spasms. The author used all these sedatives together. Spinal puncture was always done either for serum injection or to relieve pressure. The nutrition was maintained by forced feedings.

Nine cases were reported in detail with seven recoveries. M.F.P.

Gaseous Distention of the Bowel

The cause of the rapidly developing serious consequences that follow acute intestinal obstruction produced in a variety of ways represents one of the perennially discussed questions of practical medicine. The necessity of prompt surgical intervention is generally recognized, and operative relief is attempted on the basis of extensive empiric experience. The observations on the genesis of the bowel suggest the intervention of some highly toxic substance. A few years ago the intoxication was described by some investigators as the secondary effect of the loss of water through the commonly attendant vomiting and deficient absorption. The consequent dehydration was assumed to lead to disintegration of tissue substance, with liberation of toxic products. This view, championed by Hartwell and others, has for the most part been abandoned in favor of the hypothesis of a more direct production of harmful substances directly by bacterial changes in the occluded portions of the bowel. A contributory possibility has recently been described by Gatch, Trusler and Ayers [1] of the Indiana University School of Medicine at Indianapolis. They have demonstrated clearly by animal experiments that when the gas pressure within an occluded loop is increased there is a proportionate decrease in the rate of blood flow through it. In this way bacterial changes within the lumen may lead to anemic stasis of the blood in parts of the intestine. As the Indiana surgeons point out, one can readily surmise that, even in the absence of mesenteric strangulation, circulatory stasis and necrosis may develop in the obstructed bowel from gaseous distention alone. The rate at which this process operates will depend on the nature and location of the obstruction. In cases of simple occlusion in which incarceration of the bowel does not occur, reverse peristalsis may for a time prevent overdistention. Usually, however, they add, the complicated intestinal loops trap the gas in small pockets, and the constant gaseous formation from bacterial activity readily leads to pressure sufficient to occlude the blood supply in the manner described. They regard it as obvious, however, that this mechanism is more rapidly fatal under conditions in which a section of the bowel is incarcerated. It is only a small step further to conceive how gaseous distention by bacterial action in the strangulated loops rapidly produces gangrene and fatal absorption of toxins. Hence Gatch and his colleagues believe that necrosis of the bowel is the chief factor in making intenstinal obstruction a desperate surgical emergency and that this proces must be arrested early or death is inevitable.

1. Gatch, W. D.; Trusler, H. M., and Ayers, K. D.; Effects of Gaseous Distention on Obstructed Bowel, Arch. Surg, 14:1215 (June), 1927.

—*Journal A. M. A.*

LARGER NECKS

For the first time in almost forty years a firm engaged in the manufacture of children's clothing has been receiving complaints that the neck measure for babies 1, 2 and 3 years of age are too small, reports *Hygeia*. Many of the complaints coming from California, the president of the firm playfully suggests the climate as the cause of these bigger babies. More probably it is that more knowledge of what is adequate nutrition for prospective mothers is producing a bigger infant in most cases.

THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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WOMAN'S AUXILIARY

Mrs. B. S. Preston, Charleston, president; Mrs. W. H. St. Clair, Bluefield, first vice-president; Mrs. J. P. Lilly, Morgantown, second vice-president; Mrs. C. M. Scott, Bluefield, secretary; Mrs. C. A. Ray, Charleston, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. W. H. Powell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. W. C. Swann, Huntington, fourth district; Mrs. R. V. Shanklin, Gary, fifth district; Mrs. B. S. Preston, Charleston, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates—Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

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R. H. Dunn, South Charleston, chairman; C. G. Morgan, Moundsville; I. D. Cole, Clarksburg.

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Committee on Professional Relations

John R. Shultz, Charleston, chairman, (2-year term); H. R. Johnson, Fairmont, (1-year term); A. G. Rutherford, Welch, (3-year term); W. R. Goff, Parkersburg, (4-year term); Hugh G. Nicholson, Charleston, (5-year term).

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V. T. Churchman, Sr., Charleston, chairman; W. A. McMillan and R. H. Walker, Charleston, members.

Surgical Section

D. M. Aikman, Wheeling, chairman; R. K. Buford, Charleston, secretary.

Eye, Ear, Nose and Throat Section

C. B. Wylie, Morgantown, chairman; G. K. Nutting, Hinton, secretary.

Hospital Association Officers

H. F. Spillers, Wheeling, president; Sister Xavier, Wheeling, first vice-president; L. W. Lawson, Logan, second vice-president; R. A. Ireland, Charleston, treasurer; Miss Greta Payne, Charleston, executive secretary.

EDITORIAL

Scientific Abstracts

The Journal is pleased to announce the return of a monthly section devoted to abstracts of scientific papers which will be found elsewhere in this issue. From time to time the board of publication will instruct the secretary-manager to send out medical journals and publications to members of the state association. Certain articles in each journal will be marked and it is the hope of the editorial board that the recipient will read the article carefully, prepare an abstract, and return it to the editor of the *West Virginia Medical Journal.*

The fact that medical publications will be sent out does not mean that unsolicited abstracts will not be published. The editor shall be pleased to receive these abstacts at any time from any source and they will be given just as much consideration as those that are solicited. Through proper cooperation on the part of the association membership, the section devoted to abstracts should prove a valuable addition to our state journal. C. A. R.

Auxiliary Section

On behalf of the Woman's Auxiliary of the West Virginia State Medical Association, the journal takes pleasure in announcing that beginning with the September issue a full page will be devoted each month to the Auxiliary activities. This page will be conducted by Mrs. T. M. Barber of Charleston, together with a number of associate editors throughout the state, and it has been requested that all contributions and reports be sent direct to Mrs. Barber.

The West Virginia Medical Journal considers the addition of the Woman's Auxiliary page just one more step along the pathway of advancement and we feel sure that the Auxiliary section will become at once a valuable and widely read feature of our state publication. C. A. R.

Journal Reprints

Your editor again wishes to call to the attention of the members of the state association that reprints of articles appearing in the *West Virginia Medical Journal* can not be secured except at the time an article is published. Otherwise, the type must be reset at a cost that is prohibitive.

At the time an article is being published, it is already in type for the journal and reprints can be made by the Mutual Printing Company at a comparatively small cost. From two to three weeks after an issue of the journal has appeared, the type is torn down. Any doctor who wishes reprints after this type is destroyed will be disappointed unless he is willing to pay the additional cost of having all of the type reset.

Orders for reprints should be sent direct to the Mutual Printing Company, publishers of the state journal. C. A. R.

Some Observations on The State Convention

The annual meeting of the West Virginia Medical Association is now a matter of retrospective contemplation. It was of far more importance than at first glance it would appear. You that were there, try and visualize if it had not been. Let us consider the meeting. You were in your own state and yet guests in these days of excessively developed hotel systems in one of the conceded fine hotels of the country. If you journeyed to it by train you passed over the rails of one of the country's best railroads—the coveted prize of railroad capitalists. If you traveled by automobile you saw some of the most surpassingly beautiful scenery to be found anywhere. We were up on the "Hawk's Nest." We have been in the Rockies and save for white glistening snow, or the reddened glow of the Garden of the Gods we are unable to

recall a more breath taking experience. If the society ever adopts a crest we hope it will be an engraving of the "Hawk's Nest" exemplifying the high ideals of the Medical Profession of the state watching out over the health of the community. There is another idea too, and that is that we are, or at least should be, high up in the standing of our calling comparable to any, come from whence they will.

We returned from this trip all excited over our state. We do get pretty disconsolate over our legislature and various other reprehensible activities in the commonwealth but when we see the towns ,the cities, the industries and liberal arts and lastly the gorgeous scenery of our state we are full of pride and thrilled by the beauty of it all. White Sulphur Springs is a gem among hostelries. It has suffered a good deal of criticism in the past—a lot of which has come from West Virginians. Let us stop and think. The service and surroundings they give you cost as much anywhere else—sometimes a great deal more. Atlantic City, West Baden, Battle Creek, or any of the others charge you the same or more for such surroundings and such service. Let us be proud of it and ever have a good word for it. This does not apply to the waiters in the dining room. We are not nearly as much inclined to be angry over them as we are to laugh at them. To us they were comic. Somebody said they were too "high class" to serve a convention and resented it. We heard it casually remarked they were used to a "dollar a meal" tips. If so they haven't laid much aside unless "much gold hath made them rapacious and miserly.' They were as far as we saw of them a courteous lot and anxious enough to do well but their memories were negligible. The first and chief requisite of a good waiter is a good memory. We don't believe we were ever served what we asked for originally. It is true they hastened to correct it but in the case of griddle cakes—they always became cold while the fruit and cereal were being shuffled around. Rumor flew thick and fast as to their conduct over the banquet. In any event their performances were not what the average man is used to at a banquet anymore. For some reason or other nobody was served very well next morning. If this was by design —it was indeed a poor policy and one that did their employers no good. Frequently in a hospital one nurse or other employee can by a series of foolish little actions destroy the good will everybody else from surgeon down has built up around a patient. All the stories you hear about such and such a hospital being a poor place to go are founded on foolish actions usually performed by one individual. This "waiter business" is "small potatoes" to take up in a medical journal but it was the only fly there was to be found in the ointment of a hotel service that was in every way delightful and first class and which made everybody have as thoroughly an enjoyable and delightful a three or four days as they could have had anywhere any place, any time in these United States.

We picked up a *New York Tribune* one day several years ago and read to our disgust an editorial on West Virginia and its coal fields and the casualties resulting from lack of "law and order." We sat down and wrote them that the casualties in a whole year of that kind would not equal New York gangster records for one week and furthermore whenever a New Yorker wanted peace and quiet he came to White Sulphur Springs, West Virginia. They printed it with appropriate apology. So we were reminded of this as we saw the genial governor of New York, the celebrated "Al." He measured up to all the stories of being quiet and unassuming and made a good impression even on West Virginia Republicans—which is something. He would not address the society although importuned to do so. He thought it might be taken as being for political effect. Personally we feel he realized he was in the presence of a far greater politician in the person of Dr. Henri P. Linsz. Governor Smith is quite a golfer and we presume had no higher score for knocking them in the lake than did any of the others.

Doctor Chester Ogden presided gracefully and the speech of Dr. Jabez Jackson on the opening day will make this session a never

to be forgotten event. We pose as no critic but as an average observer we would say this was one of the finest addresses in a medical assemblage we have ever heard. For ease of delivery, depth of thought, practicability, smoothness of style, and ability to hold the hearer, this address came very near to perfection. Dr. Jackson made a signal impression and the way he had of meeting everybody from recent graduate to the acknowledged leader could not have been surpassed even by Governor Al Smith, his fellow guest. The remainder of the program was very good, and the whole affair reflected great credit on Dr. Harry G. Steele and his committee. It was an admirably arranged array of pleasurable events.

Every county society now has coming to it each season a brilliant number of eminent men. Mercer, Kanawha, Wood, Marion, Ohio, Cabell as well as the Tri-State and most of the others have on their lists the greatest men of our profession. This more and more each year, makes the annual gathering a matter of meeting your neighbor in social intercourse and unusual scientific endeavor the sole reason for its existence. There is no use of getting up and saying you did three hundred gall bladder operations in a year unless you happen to have found a newer and better way of doing them—and this does not mean some little nonessential feature that may happen to be your hobby. The day is coming when it will be considered bad form to get up and address a medical society unless in your paper is something that offers a new idea or a new experience.

In *The Journal* for August, 1926, this writer offered the following which was an observation made on the Morgantown meeting:

Sidelights on Last Annual Meeting

"A meeting of the state association should bring to the mind suggestions or questions that might be so examined to the end that by their adoption or even rejection the whole meeting could be improved. Doubtless we carry the so-called improvements in these United States too far in every line with frequently anything but betterment as a result. Still no harm is done in looking over new things if old style needle holders still have the popular call.

"First is the suggestion that the programs are too long and are frequently a test of the president's physical endurance. If we will stop to think a moment we will recall that the meetings of the various societies at home are to say the least decidedly "high class affairs" any more. Take the Tri-State medical meetings in the Huntington district which as we understand it have over 500 present. Ohio county has had visiting medical and surgical men from big centers for two years with almost no local men. There is not the need therefore for any lengthy display of "foreign talent" at the state meetings such as there once was. State meetings are usually run like a large circus with so much that which ever way you look you are bound to see something. It has been said however that most people miss the big acts by this method. Anyway it is open to debate whether a short program would not admit of a member not only hearing most of the scientific proceedings but participating in the social and other features as well."

This came in for quite a little criticism at the time. We found at White Sulphur Springs that this opposition has greatly changed and that more now favor this idea. Let us face the facts at any medical meeting—and this applies to the American Medical Association meetings as well—one-half or more of the attendants are not at the scientific meeting. Ask them why? Well they can only stand so much. Many men are playing golf or otherwise engaged. Why not have worthwhile programs with men stating what is new and illuminating and then frankly give over time for other things? The average doctor is "getting talked to" a lot these days. What with Rotary, Kiwanis, Lions and other clubs, society meetings, hospital conferences, radio addresses—sermons, and a lot of other agencies, to say the least,—life is pretty well crowded with advice and experience. At annual sessions he meets a lot of his colleagues, perhaps has his wife and family along, he wants to "play around" with some friends,—therefore it is quite idle to expect

him to want all his time filled in by scientific recital and procedures. We all know he does not do it. As presently run, "a program" expects enough listeners will be on hand to make a good audience. Often it does not happen and a good and well-known man will travel half the country over and be welcomed by a small audience if he is over late in the afternoon on the list.

In American life it is surpassingly strange how long it takes any large body of men or women to accept a fact that in their own minds they have for a long time known to be true. It is well known few speakers can hold an audience over twenty minutes without sacrificing all the good they have accomplished. Few of us ever do it however. In all medical meetings for sometime back, wherever conducted the word has been passed along that they were too lengthy, yet few program committees have had the courage to act on them because of human nature. We once witnessed a doctor get up and make a violent speech against reducing medical meetings from four to two a month. The officers were in favor of it. It turned out it was the only meeting the objector had attended in almost the whole year. About the year 1935 we will have found some way to have the first day a business one — with all the elections and routine over and then settle back for two days solid enjoyment. Boiled down we ought to find a whole lot to see each other about, once a year. It ought not to take a whole lot of coaxing, and cajoling and window dressing to make the doctors of a great state remain in a city two days to confer with each other. An election however thrilling or startling or exciting is after all only an incidental issue, a mere part of "the stupendous whole." A man who goes to a medical meeting only for its political side ought to examine himself in a quiet place and hour. A short, swift moving program, and the rest of the time communion in all its variations ought to keep any man of normal instincts in a town three days.

The wives and daughters of the medical men have contributed greatly in the last three or four years to the success of the meetings. It was a scene of brilliant gaiety they made at Bluefield. We shall always call the session in that town as near perfection in its entertainment. Morgantown it seems to us excelled in the hospitality of its trips and sojourns to the surrounding beautiful scenic spots. Theirs was a colorful ball, in size and numbers, as well as beauty of costume. They entertained as one would expect in a university city where the graces come as second nature. We challenge anyone anywhere to produce a more modern terpischorean spectacle than the dance of the other night at White Sulphur. As a specator we felt as proud of the participants as we had of the West Virginia scenery.

White Sulphur Springs has been allowed to become an alien resort. It is a reflection upon us. New Yorkers almost claim it as their own and as Dr. McQueen said probably give it the little touch it has of greediness and commercialism which they carry over with them from their own over priced cabarets. So at the session of the medical association this year—it came back to sheltering its own sons and daughters and they responded by giving it a touch of sincerity, even wholesomeness, that will certainly do it no harm. It was a great three days to us. Very little fault could be found with anything. Nature, man and science mingled to us in a gorgeous brilliant trinity.

-H.M.H.

Tri-State Meeting

The next meeting of the Central Tri-State Medical Society will be held at the Hotel Pritchard in Huntington on September 29, 1927. Three nationalln known doctors will be invited to lecture at the meeting and a diversified program will be given, according to Dr. F. O. Marple of Huntington, secretary-treasurer of the Tri-State society.

A business session of the Tri-State organization was held in Huntington on July 13 for the purpose of making preparations for the coming meeting. Dr. Charles E. Holzer of Gallipolis, O., president, presided at the meeting.

TRANSACTIONS

SIXTIETH ANNUAL SESSION, WEST VIRGINIA STATE MEDICAL ASSOCIATION

White Sulphur Springs, June 21-22-23, 1927

Tuesday, June 21, 1927

The West Virginia State Medical Association met in the main ballroom of the Greenbrier Hotel, White Sulphur Springs, W. Va., at 9 o'clock a. m. and was called to order by the President, Dr. C. R. Ogden of Clarksburg.

The invocation was pronounced by the Reverend French Thompson, D. D., president of the Greenbrier College for Women at Lewisburg and the address of welcome was delivered by Dr. D. G. Preston of Lewisburg, president of the Greenbrier Valley Medical Society. The response on behalf of the State Association was made by Dr. J. Howard Anderson of Marytown.

Following a number of greetings from neighboring associations, Dr. Henri P. Linsz of Wheeling introduced the ex-presidents of the West Virginia State Medical Association in attendance at the sixtieth annual gathering, with the following address:

"Mr. President, Past Presidents, Ladies and Gentlemen:

"Before presenting the living Past Presidents, it is proper and fitting that we pay homage to the Past Presidents who have passed on.

"These grand, great and good pioneers blazed the trail to make possible the practice of medicine in West Virginia. Their untiring efforts gave to you the West Virginia Medical Association of today.

"They sacrificed their lives in the interest of you, and humanity in general. Though they have died, they still live in the hearts of their fellowmen, and their works are still with us. They have passed to the great beyond from which no man returneth.

"May their memories be revered, glory and honor be their reward, and may their souls rest in heavenly peace, now and forever.

"To the living Past Presidents, it is up to you to emulate the high quality and character of your deceased brethren who have come and gone.

"Lead an exemplary life as a living tribute to these men, and as an example to your successors. Have faith in yourself, and be charitable to your fellowmen, remembering at all times that the finest gift you can bestow on your brethren is kindness. This gift was handed down to you by your predecessors. Do thou likewise—so that when your time comes to lay down this earthly yoke and pass to the great beyond—it may be said of you: 'He still lives in the hearts of his fellowmen —his life was worth living for the blessed mankind. Honor and glory be his reward. May his soul rest in heavenly peace.'

"I greet you gentlemen, from the bottom of my heart. May you live long and prosper.

"As a token of esteem and respect which I hold in my heart for you, I present to each of you this badge of distinction—pin it on your chest.

"The white ribbon signifies purity—purity of purpose; the blue in the lettering, denotes sincerity—true blue, and the gold pin which fastens it to your chest—your sterling qualities and genuine goodness of character, your work, and your sincerity.

"Accept it with my love."

At 10 o'clock the meeting was addressed by Dr. Jabez N. Jackson of Kansas City, Mo., president of the American Medical Association, on "The Progress of Surgery."

The paper of Dr. John E. Monger, health commissioner for the state of Ohio, Columbus, on "The Responsibility of the Medical Profession in Public Health Organization," was given at 10:30 o'clock.

Dr .J. Shelton Horsley of Richmond, Va., president of the Medical Society of Virginia, gave a paper on "The Treatment of Peptic

Afternoon Session

The afternoon session was opened with a paper by Dr. Gabriel Tucker of Philadelphia on "Peroral Endoscopy."

Dr. J. Sydney Ritter of New York City read a paper on "Renal Tuberculosis," with a report of a number of cases treated medically. The paper was discussed by Dr. G. G. Irwin of Charleston and Dr. C. J. Reynolds of Bluefield, concluded by Dr. Ritter.

Dr. R. S. Dinsmore, Jr. of the Crile Clinic, Cleveland, O., gave an illustrated address on "The Practical Consideration of the Goiter Problem." This was discussed by Dr. J. E. Cannaday, Charleston, Dr. W. H. St. Clair, Bluefield, Dr. F. V. Langfitt, Clarksburg, Dr. Virgil E. Simpson, Louisville, Ky., and Dr. Dinsmore.

Dr. Dinsmore's paper was followed by a paper on "Caudal Anesthesia," by Dr. T. Judd McBee of Morgantown, which was discussed by Drs. James R. Bloss of Huntington, G| G. Irwin of Charleston, J. Sidney Ritter of New York, and Dr. McBee.

Dr. Joseph Sailer of Philadelphia gave a paper on "Carcinoma of the Stomach," which was discussed by Dr. Horsley, Dr. George D. Jeffers of Parkersburg and Dr. C. A. Wingerter of Wheeling.

The afternoon session was concluded by a paper by Dr. R. Tunstall Taylor of Baltimore, Md., on the "Surgical Treatment of Infantile Paralysis," with lantern slides. This paper was discussed by Dr. Arthur S. Jones of Huntington, and Dr. E. Bennette Henson of Charleston, to which Dr. Taylor replied.

Evening Session

The Association again met in the main ballroom of the Greenbrier Hotel at 8 o'clock and was called to order by Dr. James R. Bloss. The annual address of the President was read by Dr. Ogden and was referred to a committee for consideration.

The Oration on Surgery was read by Dr. Wade H. St. Clair of Bluefield.

Dr. Virgil E. Simpson of Louisville, Ky., rendered the annual Oration on Medicine.

Wednesday, June 22, 1927

Medical Section—Morning Session

The section on Internal Medicine met in the Tudor room of the Greenbrier Hotel at 8 o'clock with Dr. Ogden presiding.

The first paper was read by Dr. L. J. Bernstein of Wellsburg on "Fever, Its Production and Regulation." This was followed by a paper on "Health of School Children," by Dr. O. L. Perry of Elkins.

Dr. A. A. Shawkey of Charleston read an interesting paper with lantern slides on "Birth Injuries and Allied Conditions."

This was followed by a paper by Dr. George M. Lyon of Huntington on "The Purulent Meningitides Occurring in Young Children," which was discussed by Dr. Robert Hood of Clarksburg and Dr. Raymond Sloan of Huntington.

A paper on "Our Duty to Diabetic Patients," was given by Dr. S. L. Cherry of Clarksburg followed by a paper on "An Unsolved Problem," dealing with cancer, by Dr. C. H. Maxwell of Morgantown.

Dr. Milton C. Borman of Montgomery read a paper on "Experiments on the Sino-Auricular Node," which was discussed by Dr. Walter E. Vest of Huntington.

Dr. D. A. MacGregor of Wheeling gave a paper on "Pernicious Anemia," and the paper was discussed by Dr. G. H. Barksdale of Charleston.

At 10:40 o'clock Dr. M. A. Moore of Kingston read a paper on "Some Late Clinical Manifestations in 626 Obstetric Cases," followed by a paper on "Hydatidiform Pregnancy with Report of Two Cases," by Dr. L. D. Howard of Fairmont.

The section on internal medicine was closed with an address by Dr. Curran Pope of Louisville, Ky., on "My Special Method for Treating Neural Syphilis."

Surgical Section

The surgical section was called to order in the main ballroom by Dr. E. Bennette Henson of Charleston in the absence of Dr. D. M. Aikman of Wheeling, chairman of the section.

The first paper was given at 8:30 o'clock by Dr. A. G. Rutherford of Welch on "Acute

Abdominal Emergencies" and the discussion was carried on by Dr. J. Shelton Horsley of Richmond and Dr. W. W. Golden of Elkins.

Dr. E. Bennette Henson read a paper on "Living Suture Repair of Hernia with End Results," which was discussed by Dr. J. E. Cannaday of Charleston.

The next paper was on "Bonegraft Surgery," by Dr. J. O. Rankin of Wheeling and was discussed by Dr. R. Tunstall Taylor of Baltimore, Md., Dr. J. E. Rader of Huntington, Dr. W. W. Golden of Elkins and Dr. E. Bennette Henson of Charleston.

Dr. C. C. Coleman of Richmond, Va., gave a paper on "The Treatment of Brain Abscess," with lantern slides which was discussed by Dr. W. S. Fulton of Wheeling.

Dr. W. S. Fulton of Wheeling gave a paper on "Observations of the Gallbladder Problem," which was discussed by Dr. W. H. Wallingford of Princeton and Dr. W. W. Golden of Elkins.

A paper on "Some of the Calamities That May Follow Attempts at the Interruption of Pregnancy," was read by Dr. John E. Cannaday of Charleston and discussed by Dr. William Neill, Jr., of Baltimore and Dr. G. M. Lyon of Huntington.

Dr. J. A. Guthrie of Huntington read a paper on "Review of Literature of Empyema of the Pericardium, with Case Report."

The last paper on the program was on "Technic of Uterine Suspension," by Dr. C. Fred Fisher of Richwood and was discussed by Dr. W. S. Fulton of Wheeling and Dr. W. W. Golden of Elkins.

During the section on Surgery, Dr. Wade H. St. Clair of Bluefield was selected as chairman for the coming year, with Dr. John E. Cannaday of Charleston, secretary.

Eye, Ear, Nose and Throat Section.

The Eye, Ear, Nose and Throat section was called to order at 8:30 o'clock in the card room of the Greenbrier Hotel by Dr. R. M. Wylie of Morgantown, chairman. The following papers were given on the scientific program:

"Latest Tear Duct Operation," by Dr. A. L. Coyle of Wheeling, read by Dr. J. A. White of Richmond, Va.

"When to Operate," by Dr. J. K. Guthrie of Hagerstown, Md.

"The Oral Cavity as a Part of Our Specialty," by Dr. C. B. Rohr of Alum Bridge.

"A Case of Intra-Orbital Extra Ocular Tumor," by Dr. V. T. Churchman, Jr., of Charleston read by title.

"Lens Extraction," by Dr. C. M. Hawes of Huntington.

"Facial Types and Facial Asymmetry," by Dr. H. V. King of Morgantown.

"Tonsilloliths," by Dr. E. C. Hartman of Parkersburg.

"Keratitis," by Dr. I. D. Cole of Clarksburg.

"Malignant Growths of the Eyeball," by Dr. H. H. Veon of Parkersburg.

"Bronchoscopy and Esophagoscopy in Relation to General Practice," by Dr. Waitman F. Zinn of Baltimore, Md.

"Bronchoscopy," with lantern slides, by Dr. E. G. Gill of Roanoke, Va.

"Bronchoscopy and Esophagoscopy," with lantern slides, by Dr. Harry H. Haggart of Bluefield.

"Observations of the Early Recognition and General Management of Glaucoma," by Dr. Luther C. Peter of Philadelphia, Pa.

"The Cornea," by Dr. Edward B. Heckel of Pittsburgh, Pa.

During the meeting of the section on Eye, Ear, Nose and Throat, Dr. E. C. Hartman of Parkersburg was chosen as chairman for the coming year with Dr. I. D. Cole of Clarksburg as secretary.

Afternoon Session

The West Virginia State Medical Association met in general session in the ball room of the Greenbrier hotel and was called to order at 2:25 p. m. by the president, Dr. Ogden.

Dr. M. A. Moore, Kingston, read a paper entitled "Some Observations in 626 Obstetrical Cases," which was discussed by Drs. James R. Bloss, Huntington; George D.

Jeffers, Parkersburg; W. W. Golden, Elkins and C. A. Ray, Charleston, and by Dr. Moore in closing.

Dr. Walter E. Vest, Huntington, read a paper on "Acute Transverse Myelitis," which was discussed by Drs. O. B. Biern, Huntington, and Curran Pope, Louisville, Ky., and in closing by Dr. Vest.

Dr. J. E. Sweet, professor of Surgical Research, Cornell University Medical College, New York City, read a paper on "The Formation of Gallstones," which was discussed by Dr. O. B. Biern, Huntington, and by Dr. Sweet in closing.

Dr. J. Ross Hunter, Charleston, read a paper entitled "Postobstetrical Infections," which was discussed by Drs. W. W. Point, Charleston; C. H. Maxwell, Morgantown; James R. Bloss, Huntington, and J. C. Irons, Dartmoor, and by Dr. Hunter in closing.

Dr. A. C. Ivy of Chicago, Ill., read a paper entitled "The Newer Physiology of the Gastro-Intestinal Tract," which was discussed by Dr. John N. Simpson, Morgantown.

Dr. William Neill, Jr., Baltimore, Md., read a paper entitled "A Discussion of Fibroid Tumors and Their Treatment from a Modern Viewpoint."

Dr. Frank V. Langfitt, Clarksburg, read a paper on "Foreign Bodies in the Stomach," which was discussed by Dr. William Neill, Jr., Baltimore, Md.; J. E. Rader, Huntington, and Chester R. Ogden, Clarksburg, and in closing by Dr. Langfitt.

A paper entitled "Hydatidiform Pregnancy, with Report of Two Cases," was read by Dr. L. D. Howard, Fairmont.

A paper on "My Special Method for Treating Neural Syphilis," was read by Dr. Curran Pope, Louisville, Ky.

The meeting then adjourned.

Thursday, June 23, 1927

The general session convened in the main ballroom of the Greenbrier Hotel at 8:30 o'clock and was called to order by the President Dr. C. R. Ogden of Clarksburg.

The opening address was made by Dr. Thomas Parran, Jr., of Washington, D. C., Assistant Surgeon General of the U. S. Public Health Service, on "The Relation of Health to the Rural Communities."

Dr. Sparrell S. Gale of Roanoke, Va., read a paper on "The Surgical Treatment of Pulmonary Tuberculosis."

A paper on "The Importance of an Early Diagnosis of Foreign Bodies in the Air and Food Passages," was read at 9:30 o'clock by Dr. Arthur Hoge of Wheeling.

Dr. Elmer Funk of Philadelphia, Pa., gave an interesting paper on "The Diagnosis and Treatment of Coronary Thrombosis."

At 10:30 o'clock Dr. Curt Meckling of Pittsburgh, Pa., read a paper on "The Interpretation of the Ano-Rectal Complaint."

Dr. Meckling's paper was followed by "The Treatment of Cancer of the Cervix," by Dr. William S. Gardner of Baltimore, Md.

Dr. John Osborn Polak of Brooklyn, N. Y., read a paper with lantern slides on "The Present Status of the Toxemias of Pregnancy, Their Diagnosis and Treatment," which paper was discussed by Dr. James R. Bloss of Huntington.

The association then adjourned *sine die.*

COUNCIL MEETINGS

Monday, June 20, 1927

The Council of the West Virginia State Medical Association met in the Tudor room of the Greenbrier Hotel at 4 o'clock p. m. and was called to order by the Chairman, Dr. C. A. Ray.

The members of the Council present were Drs. C. G. Morgan, H. R. Johnson, C. H. Hall, I. D. Cole, John Folk, W. E. Vest, J. E. Rader, H. G. Steele, and C. A. Ray. (Dr. R. H. Dunn came in later.) Others present were Dr. Chester R. Ogden, President of the Association; Drs. John N. Simpson and C. O. Henry, Past Presidents; Dr. T. M. Barber, Treasurer; Dr. R. A. Ireland, Chairman of the Committee on Public Policy and Legislation; and Mr. Joe W. Savage, Executive Secretary.

The Chairman stated that, without objection, the reading of the minutes of the last meeting would be dispensed with, as they had been published in the *Journal.*

Chairman Ray stated that the next item

of business was the report of the attorney in the Nicholson bankruptcy proceedings, and the Executive Secretary read a letter from Mr. John V. Ray, the attorney, reporting on the matter. On motion, the report was accepted for filing. The Chairman made the following statement:

"Dr. Nicholson has failed to repay any part of the insurance premium which we paid for him last year, which he agreed to pay for which he gave his note. That was in the neighborhood of $1,200 and was the first annual premium. Then he had several policies in which we still had an interest, which the Association thought best to carry for him or help him to carry. Whenever the premiums were due on those policies we paid them and took his note. The Treasurer has that report and has those notes. Dr. Nicholson verbally agreed to keep those payments up. We paid out something like $500 on those policies. It looked like sending good money after bad, so the committee (Dr. Dunn and myself) communicated it to the Council. The Council recommended that we surrender those policies and take our pro rata part of the surrender value, which we did. The question now is whether we shall pay the premium on this new policy for the next year."

In answer to a question, Dr. Ray stated that the policy is payable to the Association.

Dr. Morgan: How is Dr. Nicholson getting along financially, so far as can be seen? How much injury did this bankruptcy do to his business?

Dr. Ray: All I can tell you is what he says. He says it injured his business very much. I can not tell you how much injury it did him. When we say something to him about his obligation he says he is hard up and can not pay his grocery bill or something like that.

Q. Have his people any money?

Dr. Ray: His brothers have money. I think he has a son and a daughter probably working. He has said that he is trying to get a position with some coal mining company or hospital or something of that kind, where he thinks he can make more money than he can in Charleston. I can not tell you anything about him except what he says.

Dr. Rader: What is your opinion about it?

Dr. Ray: It does look to me as though with Dr. Nicholson working and his family working (he says his wife is working) they could pay $100 a month. Perhaps I am wrong.

Dr. Ogden: I noticed that the attorney states in his report that Dr. Nicholson said he would make some effort to obtain this money. Recently Dr. Nicholson wrote me asking me to indorse his note to the bank for $1,300 to obtain this money. I delayed answering for a few days. In the meantime I had a letter from Dr. Bloss, of whom he made the same request. I answered Dr. Nicholson frankly that I was not in position to go on his note and could not do it for anyone, as I have my own obligations. Dr. Bloss told him the same thing. I also told Dr. Nicholson that, from our friendship of twenty years' standing, I felt I must tell him that the committee felt he had not played the game. I paved the way for such an action on your part. He said since this calamity had come to him he could not recuperate his practice, that he did not think he could ever regain it in Charleston and was trying to get a salaried position. I feel that Mr. Ray, our attorney, has been very diligent in this matter and that his judgment is worth a great deal to us in our deliberations. He has been on the ground and has gone over the thing very carefully; and it is well enough, I think, for us to consider his advice to us.

Dr. Vest: Is Dr. Nicholson immune to prosecution, or not?

Dr. Ray: John says he is not.

Dr. Vest:: I understood last year that if we did not press the claim against the bonding company he would be immune.

Dr. Dunn: From them but not from us. After we released the bonding company they could not do anything.

Dr. Steele: I think if you will look over the list of stuff he bought and paid for out of our money you will see that there was something wrong, and I for one am not in favor of spending any more of the Association's money to take care of that. I say renew the policy for another year and then, if he can not take care of it, don't spend any

more of the Association's money. I think we have given him plenty of chance.

Dr. Vest moved that the Association pay the second annual premium on the life insurance policy of $25,000 and that the Chairman of the Council appoint a committee of members of the Council who have not been closely associated with Dr. Nicholson in the past to call upon him and tell him very frankly that unless he repays this money the Association will have to prosecute him.

Motion seconded by Dr. C. H. Hall.

Dr. Vest: I wish to go on record in this matter that I am not in favor of spending the Association's money, but if you think there is any chance for Dr. Nicholson to pay these premiums then I think we should advance the money.

A vote on the motion was then taken, resulting in a tie. Dr. Vest asked permission to change his vote, which was granted, and voted against it. The motion was lost. Dr. Vest then moved to reconsider, which motion was duly seconded and carried.

Dr. Vest moved that it is the sense of the Council that the Association should pay the second annual premium on the $25,000 life insurance policy on the life of Dr. Nicholson and that the Council make such recommendation to the House of Delegates.

The motion was seconded, and a general discussion ensued. (The privileges of the floor were extended to Drs. Ogden, Simpson and Henry.) Motion carried.

Dr. Vest moved that a committee of three members of the Council who have not been close friends of Dr. Nicholson in the past be appointed to call upon him and urge upon him the necessity for paying the premiums on the $25,000 life insurance policy, letting him know that he is not immune from prosecution and that there is strong sentiment in the Association for prosecuting him.

Dr. Steele offered an amendment that the committee consist of four, the fourth member thereof to be the attorney. Dr. Vest accepted the amendment. Dr. Steele then offered an amndment providing that the president of the Association appoint the committee, and this amendment was also accepted by Dr. Vest.

Motion adopted. Dr. Ogden, President, said that he would like to appoint the committee later, after having time to consider the matter.

The Executive Secretary read the report, of the special committee on association funds at the request of the chairman. Dr. Ray submitted the paid checks, vouchers, and bank pass book. On motion, the report was referred to the Auditing Committee.

Mr. Savage read his report as Executive Secretary. On motion of Dr. Rader, seconded by Dr. Steele, the report was referred to the Auditing Committee.

The report of the Committee on Publication was read by the Executive Secretary. Chairman Ray said that the action of the committee had already been approved and that, without objection the report would be filed.

Dr. Barber read his report as Treasurer, which, on motion of Dr. Morgan, was referred to the Auditing Committee.

The report of the Committee on Public Policy and Legislation was read by Dr. Ireland, chairman, and was discussed by Drs. Morgan, Vest, Henry, Ray, Steele and Ireland. Dr. Steele moved that a vote of thanks be extended to the committee for their work, which motion was seconded by Dr. Vest and carried.

(Dr. Dunn came in during the discussion of the above report.)

First District—Dr. Morgan reported as follows:

The upper end of the First District is in very elegant condition. I have reports from the secretary of the Hancock County Medical Society in which he says his society is in a very flourishing condition. That is also true of Brooke County. Our county is in very good condition, too. Marshall County is in the worst condition of all. Several things happened which reduced the membership, but we are getting the members in again this year. On the whole, the district is in good condition.

(There was no report from the other part of the First District, Dr. Johnson having left the meeting before this time. Dr. Henry

reported that Marion County is in good condition.)

Second District—Dr. Hall read the report for this district, as follows:

Members of Council, we submit the following report for the Second district:

Report of Barbour-Randolph-Tucker County Medical Society

Number paid members for 1927, 28; number delinquents this year, 6; three moved out of bounds; number eligible physicians in bounds not members, 22; membership compared with last year, 31; meetings held during year, 6; average attendance, 12. Interest —Very indifferent; some of our heretofore active members seem to have lost interest

Report of Eastern Panhandle Society

Number paid members for 1927, 14; number delinquents this year, 4; number paid-up members for 1926, 20; number physicians not members but eligible, 15. There are 7 honorary members over 65. This society is asking for the 1928 meeting.

Report of Grant-Hardy-Hampshire-Mineral Medical Society

Number of members in good standing, 28; number of delinquents, 2 number of doctors that are eligible but not members, 15; number paid-up physicians last year, 30; number of new members, 2. One member retired, one died during the past year. Four meetings held—average attendance, 10. Good interest shown, more than usual.

Report of Preston County Society

Number paid-up members for 1927, 22; number delinquents this year, 4; number paid-up physicians last year, 20; number of physicians not members, 4. More interest shown than usual. Dr. W. F. Daily of Terra Alta has a malpractice suit on hand from some injury to a man's leg. The trial comes up in July. He has three attorneys to help him. There is a movement on foot to have this society unite with the Monongalia Society.

Report for Monongalia Medical Society

Number paid-up members for 1927, 44; number delinquents this year, 2; number honorary members, 2; number dropped from membership because of non-payment of dues for one year, 1; number transferred members, 1; number of physicians who are eligible but not members, 7; number paid-up members last year, 42; number new members, 5; average attendance, 20. Meetings every month. Interest fair. The woman that killed Dr. Borror last year was sent to the penitentiary for twelve years.

C. H. HALL,
C. H. MAXWELL.

Third District—Dr. Folk read the report for the Third District as follows:

The Doddridge County Medical Society has four members. To date three have paid up. Their membership is limited as there are only eight physicians in the county.

The Lewis County Medical Society out of a membership of 17 has only one delinquent. There are, however, 13 physicians in the county, who are not members of the County Society.

Central West Virginia, so far this year has 22 paid-up members and 10 delinquents. This society is spread over a number of counties and the opportunity for a closely knit organization is not very favorable. They reported one new member this year.

The Harrison County Medical Society is in splendid shape at the present time, having out of a membership of 79 only one delinquent, three honorary members, one death, 74 paid-up members. There are 22 physicians in the county who do not belong to the society. This society has added three new members this year. The society is more active than ever before, members are taking great interest and the attendance is very good.

The Third District considered as a whole is in good shape and all of the component societies have splendid secretaries who are very prompt and efficient.

Harrison, Marion and Monongalia Counties have organized a tri-county medical society, which have three meetings a year, meeting once in each county. This society is very active and has a bright future.

JOHN FOLK,
I. D. COLE

Fourth District. Dr. Vest read the report, as follows:

To the Council of the West Virginia State Medical Association:

Gentlemen:

We, the Councillors of the Fourth District, respectfully submit the following report, as of June 17, for the current year:

There are two regularly organized constituent societies in the Fourth District: the Cabell County Society and the Parkersburg Academy of Medicine. Cabell County Society has a paid-up membership of 77 with 16 delinquents as against 71 paid-up members and 15 delinquents on the corresponding date in 1926. There are 39 physicians residents of Cabell County who are not members of the society and there are about 25 others who are adjacent not members of the State Association.

The Parkersburg Academy of Medicine has 63 paid-up members and 6 delinquents as against 63 paid-up members and 4 delinquents the corresponding date last year. In Wood County there are 12 doctors who do not belong to the society. In the adjacent unorganized counties the number of physicians who are non-members are as follows: Roane 11, Wirt 4, Jackson 10, Pleasants 4.

Tyler County has no regularly constituted society. There are three meubers who pay dues directly to the State Association. The physician population of the county is 12. It is probably best that a county society be organized there. Mason County in this district is unorganized. It has a physician population of 16, only one of whom is a member of any society. It would seem that a component society should be formed in Mason.

WALTER E. VEST,
J. E. RADER.

Fifth District. Dr Steele made the following report:

So far as I can tell, the societies in our district are getting along very well. I can not say anything about McDaniel, because I do not know the exact situation there. In Mercer County we have 53 paid-up members, with three delinquqents. There are few physicians in the county not belonging to the society. Our dues have been $15 a year. Like Cabell County, we have a little surplus, but we do not expect to reduce the dues. In Mercer County we have had eleven meetings in the last twelve months, and I consider them successful meetings.

Sixth District. Dr. Dunn read the report for the Sixth District as follows:

Allow me to submit the following report on the Sixth District composed of Fayette, Greenbrier Valley, Kanawha and Raleigh Medical Societies:

Fayette County has 49 paid-up members and 5 delinquents. At the same time last year this society had 45 members and one delinquent. There are 14 doctors in the county who do not belong to the society.

Greenbrier Valley has 27 paid-up members and 3 delinquents. On July 1, 1926, this society had 18 members and one delinquent. There are 14 doctors residing in Greenbrier Valley who are not members of the society.

Kanawha County at the present time has 99 paid-up members and 23 delinquents, as against 110 paid-up members and 10 delinquents on July 1, 1926. There are 56 doctors in the area governed by the society who are not members.

Raleigh County has 36 paid-up members and 7 delinquents as against 38 paid-up members and 2 delinquents July 1, 1926. There are 12 doctors in the county who are not members of the society.

R. H. DUNN,
C. A. RAY.

Chairman Ray stated that the next item of business was a recommendation of the Executive Secretary that a working fund of $1,000 be provided to take care of the work of the Charleston office. This matter was discussed by Dr. Vest, who presented the following resolution and moved its adoption:

"Resolved that a working fund of $1,000 be set aside by the West Virginia State Medical Association to meet the monthly expenses of the office of the Executive Secretary of the said association, said fund to be kept in a single and separate bank account apart from other funds of the said association and to be checked upon by the Executive Secre-

tary of the said association to meet the monthly expenses incurred by his office; provided that it shall be understood that on the first day of every month, or as soon after that time as possible, the expenses of the Executive Secretary during the next previous month shall be refunded by the Treasurer of the said association after said expense account has been approved by the President of the West Virginia State Medical Association, said refund to be deposited in the separate working fund account to bring the said account back to the original amount of $1,000 set aside by the West Virginia State Medical Association."

Dr. Rader seconded the motion to adopt the resolution. The matter was discussed by Dr. Vest, Mr. Savage (who explained the need for such a fund), and Drs. Steele, Ray, and Ogden. The motion was carried, and the resolution was adopted.

The Chairman called for the report of the Committee on Medical Defense. At the request of Dr. Dunn, the chairman of the committee, the report was deferred.

Appointment of Committees

On motion of Dr. Vest, the Chairman of the Council was instructed to appoint an Auditing Committee. Chairman Ray appointed Drs. Steele, Morgan, and Cole as such committee.

New Business

Chairman Ray said that a committee had been appointed to investigate the feasibility of providing a permanent home for the Association, Dr. W. P. Black being chairman of the committee. Dr. Black read a report and resolution, which (on motion) were referred to the House of Delegates, Dr. Black being asked to present the matter to that body.

Applications for Honorary Membership

At the request of the Chairman, the Executive Secretary read the names of applicants for honorary membership. Discussion by Drs. Steele and Ogden. Chairman Ray said that the matter should be taken up by the House of Delegates.

On motion of Dr. Dunn, the salary of Miss Payne was increased to $150 a month, beginning July 1.

Chairman Ray read a telegram from Dr. A. B. Eagle asking the Association to meet at Martinsburg in 1928.

President Ogden submitted a letter from the Preston County Medical Society asking that the Preston and Monongalia County societies be merged and a charter be granted to the Monongalia-Preston Counties Medical society to take effect January 1, 1928. Chairman Ray deferred consideration of the matter until he could obtain further information.

President Ogden then read a letter from Mrs. G. D. Lind. The matter was discussed by Drs. Rader and Henry, the latter suggesting that the letter be read in the general session and contributions be asked for. Chairman Ray said that this would be done.

There being no further business, the Council adjourned to meet on the call of the chairman.

The Council of the West Virginia State Medical Association met at 1:30 p. m., June 21, Greenbrier Hotel, White Sulphur Springs, with the following members present: Dr. C. A. Ray, chairman, Drs. I. D. Cole, John Folk, H. G. Steele, R. H. Dunn, C. G. Morgan, H. R. Johnson, C. H. Hall, W. E. Vest, C. H. Maxwell, and Joe Savage, Executive Secretary.

The meeting was called to order by Dr. Ray, chairman.

The first order of business was the report of the Medical Defense Committee by Dr. R. H. Dunn, chairman, which report was accepted by the Council.

In electing the Executive Secretary for the coming year, Dr. Vest nominated Mr. Joe W. Savage, and he was unanimously re-elected.

In electing the attorney for the Association, Dr. Dunn made a motion that Mr. John V. Ray be retained, as he has accomplished much for the association, and is very valuable to us. Dr. Morgan, on seconding the motion, stated that Mr. Ray has done exceptionally good work. The motion was unanimously carried, and Mr. Ray was re-elected.

Dr. Cole made a motion which was duly seconded that the same Publication Committee be re-elected for the coming year. This motion was carried without dissenting voice.

Dr. Maxwell asked the Council if an honorary member of the Association should retain

all privileges of active membership. In the discussion that followed, it was the unanimous consent of the Council that an honorary member should retain all rights, that he previously had as an active member, the only difference being the waiving of dues.

The Auditing Committee then reported their action as follows:

"The Executive Secretary's report of the expense account of the office for the month of May and half of the month of April was found to be correct. The final settlement of Sterrett O. Neale with the West Virginia State Medical Association, as set forth by Mr. Norman S. Fitzhugh, certified public accountant, was found to be correct. In auditing the account of the Treasurer, Dr. T. M. Barber, we found his account correct."

Respectfully,

H. G. STEELE,
C. F. MORGAN,
I. D. COLE.

On Dr. Maxwell's motion the above report was accepted.

Dr. Ray then explained to the Council that in the Neale case, it was necessary for the Publication Committee to take things in hand, and later get the Council's consent, as matters were at a crisis. After the meeting of the Publication Committee in Huntington, in April, at which meeting Dr. J. E. Rader, member of the Council was present, Dr. Ray found it necessary to ask the bank not to honor any more checks without Dr. Ray's endorsement. This proved out to save the Association money. Dr. Vest also explained that the situation was acute, and the members of the Publication Committee had to take immediate action. The Council assured them that they were backed in every way by all members of the Council.

Dr. Vest was then given permission by the Council to bring up before the House of Delegates the Council's action in December, that no Treasurer should succeed himself more than five terms.

Dr. Morgan stated to the Council his appreciation of their message to him in December, when he was very ill.

The Council then adjourned to meet again immediately after the session of the House of Delegates on June 23.

Pursuant to adjournment on June 23, the Council convened at 9:00 a. m. in the Tudor room of the Greenbrier Hotel at White Sulphur Springs.

Organization of the Council being the first order of business, Dr. R. H. Dunn was unanimously elected chairman of the Council.

In order to fill the vacancy on the Publication Committee, since Dr. Ray was elected President of the Association, Dr. James R. Bloss was elected editor of the West Virginia Medical Journal for the coming year.

The Council thereupon adjourned sine die.

HOUSE OF DELEGATES
Monday, June 20, 1927

The House of Delegates of the West Virginia State Medical Association met in the Tudor room of the Greenbrier hotel at 8:45 p. m. and was called to order by the President, Dr. Chester R. Ogden.

The following delegates were present:

Brooke County—L. J. Bernstein.

Cabell County—J. C. Matthews, F. O. Marple, Oscar B. Biern, W. C. Swann.

Central West Virginia—S. S. Hall.

Greenbrier Valley—H. L. Goodman.

Hancock—F. B. Harrington.

Marion—C. J. Carter, E. P. Smith, J. M. Trach.

McDowell—R. V. Shanklin, W. B. Stevens.

Mercer—H. G. Steele, R. O. Rogers.

Monongalia—G. R. Mawell.

Ohio—J. G. Thoner, E. L. Armbrecht, H. M. Hall, R. U. Drinkard, W. T. McClure.

Parkersburg Academy of Medicine—T. L. Harris.

Raleigh—Walter D. Simmons.

President Ogden announced the presence of Dr. J. N. Jackson, of Kansas City, President of the American Medical Association, and introduced Dr. Jackson. Dr. Jackson spoke as follows:

"I esteem it a very great privilege to appear before you as the representative of the American Medical Association and to extend its greetings to you. Some time ago I had the great pleasure of meeting your

president of this year, Dr. Ogden, on the Pacific Coast and traveling across the continent with him and his delightful wife and two charming daughters; and when I learned that he is president this year it became doubly delightful to come. As president of the American Medical Association I realize that I am representing ninety-four thousand doctors, most of them engaged in the everyday practice of medicine. It is a pleasure for me to come in contact with them, so that I may determine their will and, so far as I am able, accomplish the things they want."

The following reports were read and recieved:

Committee on Scientific Work—Read by Dr. H. G. Steele, Chairman.

Committee on Publication—read by Mr. Joe W. Savage, Executive Secretary.

Executive Secretary— read by Mr. Savage

Special Committee to Handle the Finances of the Association—read by Mr. Savage.

Treasurer's report—read by Mr. Savage.

Dr. C. A. Ray, chairman of the Council, reported that the reports of the executive secretary, the treasurer, and of the special committee to handle the association's funds had been presented at the meeting of the council on Monday afternoon and had been referred to an auditing committee.

President Ogden said that the program provided for the election of officers on Thursday afternoon of the meeting but the chair would have to rule that the program must conform strictly to the constitution, which provides that the election of officers shall be the first order of business on the morning of the last day of the annual meeting.

Dr. O. B. Biern moved to amend the constitution to provide for the election of officers as the last item of business on the second day of the annual meeting. The motion was seconded and was discussed by Drs. J. Howard Anderson, C. O. Henry, James R. Bloss, O. B. Biern, H. P. Linsz and H. G. Steele. (This motion was then filed in writing.)

Dr. H. G. Steele offered (in writing) the following notice: "That it will be moved to change Section 3, Article IX, of the constitution so that it will read 'The election of officers shall be the first order of business on the afternoon of the third day of the annual session'." This was discussed by Dr. W. W. Golden.

A point of order was made that the motions are not discussable, and they were tabled for one year.

Dr. C. A. Ray, chairman of the Council, stated that the Preston County Medical Society had asked permission to merge with the Monongalia County Society and that a charter be issued to the new society, The Monongalia-Preston Counties Medical Society. The executive secretary read the letter from the president and secretary of the Preston County Medical Society making this request. The matter was discussed by Dr. W. W. Golden, who said the councillor of the district, should be consulted before taking any action. Dr. C. H. Maxwell, councillor for the Second district, discussed it, as did Drs. C. A. Ray, H. P. Linsz and C. F. Fisher. On motion of Dr. Dunn, the matter was laid on the table.

The report of the Committee on Public Policy and Legislation was read by Dr. R. A. Ireland, chairman, and was received and filed as information.

The report of the Committee on a Permanent Home for the Association was read by Dr. W. P. Black, chairman. On motion of Dr. James R. Bloss, seconded by Dr. H. P. Linsz, the report was received and the committee continued. It was then moved that Dr. Bloss be made the sixth member of the committee. Motion seconded and carried.

Dr. C. A. Ray announced a meeting of the Council at 1:30 p. m. on Tuesday in room 319, to receive the report of the Auditing Committee and any other business that may come up.

Dr. W. P. Black asked that the House of Delegates create a new section to be known as the section on gastroenterology and proctology.

Dr. C. O. Henry asked if Dr. Jackson, president of the American Medical Association, could give any information about the regulations governing midwives in other states. Dr. Jackson said the information could be obtained from Mr. Woodward, the

legal adviser of the American Medical Association.

There being no further business, the House of Delegates then adjourned to meet on Thursday morning at 8 o'clock.

June 23, 1927

The House of Delegates met in the Tudor room of the Greenbrier hotel at 8:25 a. m. and was called to order by the president, Dr. Ogden.

On motion, the reading of the minutes of the last meeting was dispensed with.

After the roll call by the executive secretary, the President called for nominations for president.

Dr. H. P. Linsz: Mr. President and gentlemen of the House of Delegates: I should like to place in nomination for the office of president of this association a man who has shown his worth and who has been of inestimable value to the association in the various offices he has occupied. He is untiring in his efforts, firm in his convictions, plays no favorites, and his modesty is that of a woman. Dr. Ray, stand up. (Dr. Ray stood.) (Applause.) It is a privilege, I assure you, Mr. President and gentlemen of the House of Delegates, to place in nomination this man who, if elected, will safely pilot this ship of state, our association, through the rocks to the harbor of success in 1928. It gives me great pleasure to present Dr. C. A .Ray as a nominee for president for the year 1928.

Dr. H. G. Steele: I want to second that nomination.

Dr. George A. MacQueen: Dr. Ray and I were associated for ten years. He exemplifies what I should term the highest type of professional dignity and professional ethics. If you live with a man for ten years in the same office you will pretty nearly find him out. It certainly does give me a great deal of pleasure, on a basis of experience, to second the nomination of Dr. Ray.

Dr. H. M. Hall moved that the nominations be closed. Motion seconded. Dr. C. O. Henry offered an amendment providing that the secretary cast the unanimous vote of the association for Dr. Ray. Dr. Hall accepted the amendment. Motion carried. (Applause.)

President Ogden appointed Dr. MacQueen to escort Dr. Ray to the front.

Dr. MacQueen: It is a great pleasure to me to see this gentleman awarded this honor. I have lived with him, and I know him, and I know he should have it.

Dr. C. A. Ray: Mr. President and gentlemen of the association: I wish that I could command adequate language and that my emotions at this moment would permit me to express my gratitude for this honor. I realize the responsibility and accept it with the honor. For the last twenty years, during which I have been more or less familiar with the activities of this association, there has been no going backward. It is going forward all the time; "Progress" has been written on our escutcheon; and it is up to me either to equal or surpass the records of my illustrious predecessors. To that end I solicit your individual cooperation and assistance. I thank you.

First Vice-President

Dr. C. O. Henry: I think it is customary to honor the county in which the meeting is held. I therefore place in nomination Dr. D. G. Preston of Lewisburg.

Nomination seconded. Motion that the nominations be closed and Dr. Preston be elected by acclamation. Carried.

Second Vice-President

Dr. J. G. Thoner nominated Dr. E. L. Armbrecht, of Wheeling. There were no other nominations, Dr. Armbrecht was duly elected.

Third Vice-President

Dr. R. H. Dunn nominated Dr. W. C. Swann of Huntington. Nomination seconded by Dr. O. B. Biern. Dr. Swann was elected.

Treasurer

Dr. J. E. Rader nominated Dr. T. M. Barber of Charleston, the present incumbent. Nomination seconded by Dr. W. E. Vest. Dr. C. O. Henry moved to close the nominations; motion seconded by Dr. James R. Bloss; carried. Dr. Barber was elected.

Councilors

First District. Dr. George D. Jeffers

nominated Dr. Charles G. Morgan of Moundsville, for re-election. Dr. H. P. Linsz seconded the nomination and moved that Dr. Morgan be elected by acclamation. Dr. H. G. Steele seconded the motion and it was carried.

Second District. Dr. W. W. Golden nominated Dr. C. H. Hall of Elkins to succeed himself. Dr. George A. MacQueen seconded the nomination. Dr. J. C. Irons moved that the nominations be closed and the secretary instructed to declare Dr. Hall elected by acclamation of the house. Motion seconded and carried.

Third District. Dr. John Folk nominated Dr. I. D. Cole of Clarksburg to succeed himself. Dr. E. L. Armbrecht and Dr. C. H. Maxwell seconded the nomination. Motion to close the nominations; seconded; carried.

Fourth District. Dr. J. E. Rader nominated Dr. Walter E. Vest of Huntington to succeed himself. Dr. Linsz seconded the nomination and moved that there be no further nominations and that the house vote on his election. The president instructed the secretary to cast the unanimous ballot of the association for Dr. Vest.

Fifth District. Dr. W. H. Wallingford nominated Dr. H. G. Steele of Bluefield to succeed himself. Dr. R. H. Dunn seconded the nomination and moved to close the nominations and elected Dr. Steele by acclamation. Motion seconded and carried.

Sixth District. Dr. K. M. Jarrell nominated Dr. H. A. Walkup of Mount Hope. Dr. James R. Bloss seconded the nomination and moved that the nominations be closed. Dr. Walkup was elected.

Delegate to American Medical Association

Dr. James R. Bloss nominated Dr. H. P. Linsz of Wheeling to succeed himself. Dr. C. O. Henry seconded the nomination. Dr. E. L. Armbrecht moved to close the nominations and that the secretary cast the ballot. Motion seconded and carried.

Alternate. Dr. R. U. Drinkard nominated Dr. Harry M. Hall. Seconded by Dr. J. E. Rader. Dr. C. G. Morgan moved that the nominations be closed and Dr. Hall be elected by acclamation. Motion seconded and carried.

Committee on Scientific Work

Dr. E. L. Armbrecht nominated Dr. R. U. Drinkard of Wheeling as chairman of the committee.

Dr. R. U. Drinkard nominated Dr. O. B. Biern of Huntington.

Dr. Walter E. Vest nominated Dr. A. H. Hoge of Bluefield.

Dr. H. P. Linsz moved that the nominations be closed and these three be declared elected. Motion seconded and carried.

Committee on Professional Relations

Dr. C. O. Henry nominated Dr. E. P. Smith of Fairmont to succeed Dr. H. R. Johnson. Nomination seconded. Elected.

Committee on Necrology

Dr. W. W. Golden moved that Dr. C. O. Henry be made chairman of the committee. Nomination seconded by Dr. J. E. Rader.

Dr. Rader nominated Dr. W. W. Golden as a member of the committee.

Dr. H. A. Walkup nominated Dr. L. J. Bernstein of Wellsburg.

Dr. E. L. Armbrecht move that the nominations be closed and the secretary cast the unanimous ballot of the association for these three nominees. Motion seconded and carried.

Dr. Harry M. Hall moved that all decisions of the chair so far have the approval of the members of the House of Delegates. Motion seconded by Dr. Linsz and carried.

Committee on Medical Education

Dr. C. O. Henry moved that the same committee be re-elected, with Dr. John N. Simpson as chairman. Motion seconded by Dr. J. E. Rader and carried.

Committee on Workmen's Compensation

Dr. W. W. Golden nominated Dr. Ross Hunter of Charleston as chairman. Dr. David Hill seconded the nomination.

Dr. H. G. Steele nominated Dr. M. M. Mastin.

Dr. K. M. Jarrell nominated Dr. Robert Wriston of Beckley as a member of the committee.

Dr. J. .E Rader nominated Dr. W. A.

McMillan and Dr. R. H. Walker, both of Charleston, to succeed themselves.

Dr. George A. MacQueen nominated Dr. W. A. McMillan as chairman. Nomination seconded by Dr. Dunn.

Dr. Golden withdrew the name of Dr. Hunter as chairman but retained him as a member of the committee.

Dr. W. E. Vest moved that nominations for chairman be closed and Dr. McMillan be declared elected. Motion seconded and carried.

A vote by ballot was taken, resulting as follows: Hunter, 34; Walker, 24; Wriston, 15; Mastin, 12. Drs. Hunter and Walker were declared elected.

Report of Committee on President's Address

The Chair called for the report of the Committee on the President's Address, and the following report was read by Dr. Walter E. Vest, chairman, and was adopted:

Your Committee on the President's Address beg to report that they have carefully considered the address and the recommendations contained therein. The author and the association are to be congratulated upon this address and especially upon those features of it advocating the necessity of closer and completer organization and of better education of the laity and legislators, and we urge upon each member to labor unceasingly in season and out of season to accomplish these ends.

Respectfully submitted,

(Signed WALTER E. VEST, *Chairman.*
CHARLES G. MORGAN,
R. O. ROGERS.

Report of Committee on Preventive Medicine

The report of this committee was called for but, it not being ready, the chair said it would be dispensed with. On motion of Dr. W. C. Swann, seconded by Dr. H. G. Steele, the members of the committee (Dr. David Littlejohn, Charleston, Dr. John Thames, Charleston, and Dr. W. H. McLean, Wheeling) were re-elected to succeed themselves.

Place of Meeting

Dr. W. W. Golden moved that the association meet at Fairmont in 1928.

Dr. C. H. Maxwell read a letter of invitation from Dr. A. B. Eagle of Martinsburg.

Dr. C. O. Henry said that the Marion County Medical Society had instructed its delegates to ask the association to meet next year at Fairmont.

Dr. E. L. Armbrecht moved that the nominations be closed. Motion seconded by Dr. Charles G. Morgan.

Dr. Walter E. Vest asked that the invitations which had been received be read. The executive secretary read a telegram from the West Virginian hotel, Bluefield; a telegram from Dr. C. C. Johnson, president of the Eastern Panhandle Medical Society; a telegram from Theo Barrow, manager of the Shenandoah hotel, Martinsburg; a telegram from Dr. A. B. Eagle, secretary of the Eastern Panhandle Medical Society, Martinsburg, and a letter from Thornton Lewis, president, White Sulphur Springs, Inc.

Dr. C. A. Ray seconded the motion to go to Fairmont and offered an amendment providing that the executive secretary write letters expressing the thanks of the association for the other invitations. Motion seconded and carried.

Dr. John N. Simpson moved that the expense of the banquet be hereafter paid for by the individual members and not by the local profession, in order that some of the smaller towns may be enabled to invite the association to meet there. Motion seconded by Dr. H. G. Steele. After discussion by Dr. E. L. Armbrecht and Dr. Simpson, the motion was carried.

The executive secretary read a telegram of greetings from the West Virginia State Pharmaceutical Association.

The chair read the letter from Mrs. G. D. Lind which had already been submitted to the Council. Dr. C. H. Maxwell said since the members had been paying in thousands of dollars to the indigent fund this request should be met out of that fund. Dr. W. W. Golden moved that the matter be referred to the committee having the indigent fund in charge and that Mrs. Lind be helped in accordance with her needs and our ability. Dr. Walter E. Vest stated that the fund is for indigent physicians. Discussion by Dr. J. C. Irons and Dr. Maxwell. The chair stated that a voluntary contribution would

be made. Dr. H. G. Steele moved that the money collected for Mrs. Lind be turned over to Dr. J. E. Rader to be delivered to her. Motion seconded and carried. President Ogden announced that $71 had been contributed for this purpose.

Dr. H. P. Linsz moved that all living past presidents be made honorary members of the association, those having arrived at the age of sixty-five to be made honorary members according to the provisions of the constitution and the rules being suspended for the others and they being made *ipso facto* honorary members but paying their dues until the age of sixty-five is reached. The chair ruled that the motion is out of order.

President Ogden read the following telegram:

Baltimore, Md., June 22, 1927.
Dr. Chester R. Ogden, President,
W. Va. State Medical Association,
White Sulphur Springs, W. Va.

Greeting to all. Am with you in spirit and in wishing this the best meeting ever. In honor of Dr. McSherry can we have a rising vote, since he has given a practical demonstration of the problem of living a full life fraternally?

S. S. WADE,
Johns Hopkins Hospital.

It was moved that the chair appoint a committee to send a telegram of sympathy to Dr. McSherry in his illness and of congratulation upon his long life. Motion seconded and carried.

Dr. Walter E. Vest stated that at the meeting of the Council in December a resolution was presented and adopted limiting the length of time any one member may serve as treasurer and moved that it be received and laid on the table for action next year. Motion seconded. The resolution follows:

RESOLVED that Chapter VI, Section 3, of the by-laws be amended by the addition of the following sentence: "No treasurer may be elected to succeed himself more than four consecutive terms."

Dr. J. C. Irons offered the following resolution and moved its adoption:

Whereas the relative increase in the criminally depraved, the epileptic, and the morons seems to be greater than the law-abiding and the intellectual; and

Whereas, if we shall perpetuate the purity of our race, it behooves us to take action to remedy this deplorable condition; and

Whereas no organization is better qualified to inaugurate and carry on an education campaign than the medical profession; therefore be it

Resolved that this medical society pledges its services and influence to an educational campaign to create public opinion along this line ;and be it further

Resolved that we do all we can to secure the enactment of legislation to have the criminally depraved and the mentally deficient sterilized while in our penal institutions or in hospitals for treatment.

After discussion, the resolution was adopted and was referred to the Committee on Public Policy and Legislation.

Report of Committee on Medical Education

Dr. John N. Simpson, a member of the committee, read the following report, which was adopted on motion of Or. E. L. Armbrecht:

We are glad to report that, owing to the increase in the teaching staff in the School of Medicine of the West Virginia University, there has been an improvement in the teaching of medical students.

The University and the State officials who are interested in the establishment of a full four-year course at the university spent much time in an effort towards the adoption of this plan by the legislature at its recent session. While we regret the failure of the legislature to take definite action, nevertheless we urgently recommend that the State Medical Association again go on record as favoring this movement at the next session of the legislature in 1929.

(Signed) W. T. HENSHAW,
WM S. FULTON,
JOHN A. SIMPSON.

Dr. John Thames offered a resolution urging the use of toxin-antitoxin to prevent diphtheria, and Dr. C. O. Henry moved its adoption. Motion seconded by Dr. Charles G. Morgan and carried.

Dr. H. G. Steele suggested that a vote of thanks be extended to the hotel and to the local profession and others who had helped to make the meeting a successful one. The

chair stated that this matter had been attended to.

There being no further business, the House of Delegates adjourned *sine die.*

Report of Executive Secretary

Your executive secretary wishes to submit herewith a brief report of his activities since taking over the duties of the central office at Charleston on May 1, 1927.

The paid-up membership at the present time is 966 with 155 delinquents. At this time in 1926 there were 959 paid-up members and 96 delinquents. In other words, the paid-up membership stands this year just about where it was in 1926 while the delinquent list for 1927 is greater by 59 names. Just why this delinquent list is greater this year than it was in 1926 your executive secretary is unable to say. It might be pointed out, however, that I sent out a letter to the secretaries in regard to membership shortly after I took office and the response was even better than I had hoped for. In less than a month after I assumed the duties of executive secretary, I was confronted with the problem of preparing for this convention and since that time have not been able to handle this matter of delinquents as I hope to look after it this summer.

Your secretary is pleased to report this year that there are 88 new members of the association and that a gain of 78 members has been made over 1926. When it is remembered that in 1926 the association lost 54 members this report will possibly take on a pleasing aspect.

The Charleston Office

Immediately upon taking office, your executive secretary started a new system for taking care of the accounts and funds handled which I feel sure will meet with the approval of every member of this body. With the present system, it can be determined at a moment's notice just exactly what funds have been paid out. This system pertains not only to the association but to *The Journal* as well and a constant balance of the respective cash books is kept to avoid error.

Your executive secretary would like to make one suggestion in connection with the system of handling accounts in the Charleston office which he feels to be of prime importance to the association. First, a word about the present method.

All money that comes into the office of the executive secretary is deposited in the Capital City bank of Charleston. In order to pay the expenses of the office, it is necessary for the secretary to check on this account, although all funds received, without exception, must be turned over to Dr. T. M. Barber, the state treasurer. The result is that before turning over the funds received, it is necessary for the executive secretary to send his expense account to the president for approval, then submit it to the state treasurer for reimbursement, and after that, if the secretary has not drawn on the account in the meantime, he can deposit his expense check and turn over the required amount to the state treasurer. This leaves your executive secretary without any funds of any kind until further dues begin to trickle in from the county societies.

The remedy for this situation is so simple that it hardly requires an explanation. If the council would set aside the sum of $1,000 as a working fund for the secretary's office to be kept in a separate bank account the need of an elaborate system of books would be done away with. As in the past, all funds received would be deposited in the Capital City bank and this account would never be touched except to turn over the entire balance at regular intervals to the state treasurer. This working fund of $1,000 would be sufficient to take care of all expenses in any given month. At the end of every month your executive secretary would make up his expense account as in the past, send it to the president of the association for approval, and secure his reimbursement check from the state treasurer. The check for reimbursement would then be deposited in the separate account to bring the total back to $1,000 and the office would

start every new month with its records behind and a clear slate ahead.

Your executive secretary has suggested that the working fund be $1,000 because he feels that this amount is sufficient to meet any monthly expense and because he feels that the association can set aside this amount without causing any financial embarrassment to the state treasurer. I feel practically certain that the association will come out at the end of the present year with $2,500 in the bank.

I have submitted this plan to both Dr. C. R. Ogden, president of the association, and Dr. C. A. Ray, chairman of the council, and they are in favor of it. I also submitted the plan to Mr. Norman S. Fitzhugh, a certified public accountant at Charleston, and he was of the opinion that the accounts of the executive secretary could not be handled in a more satisfactory manner than the one outlined above.

The first duty of your executive secretary, as I see it, is service to the members of the association. It might be said at this time that I believe this service could be increased at least 25 per cent if the method I have presented is adopted, as its adoption will greatly relieve the secretary from the worry and confusion of intricate figure juggling.

The Journal

Your executive secretary is also pleased to report that on May 1, 1927, the *West Virginia Medical Journal* was printed and in the postoffice on time for the first time in several months. *The Journal* was two days late in June because of the added burden of printing the program of this convention but I expect in the future to have every issue out by the first of the month.

When *The Journal* was turned over to me there were outstanding bills of approximately $650 and a balance in the bank of $53.03. Of course the revenue for the May *Journal* came in during that month, thereby cutting down the outstanding bills to $210.50. It might be added that the present indebtedness of *The Journal* is $110.50, that the bank balance is in the neighborhood of $25, and that the 2 per cent discount allowed by printer was taken advantage of in June for the first time in more than a year.

One of the first steps taken by your executive secretary in connection with *The Journal* was to attempt to bolster up the national advertising. Since taking office, I have secured a one-year contract from Dr. Scherer's sanitarium for a full page, a half-page for one-year from Dr. Tucker's sanitarium in Richmond, another half-page for three months, and two quarter-pages for six months. At the present time arrangements have been practically completed with the Mulford company of Philadelphia to run a full page through the summer on a snake-bite remedy approved by the American Medical Association. I expect to end up the present year by showing a *Journal* profit of approximately $500.

I will not take up your valuable time now by any long drawn-out plea to patronize *The Journal* advertisers. Of course I want your to patronize *The Journal* advertisers insofar as is consistent with your practice and I know you will. I simply want to ask you to always remember that the *West Virginia Medical Journal* is your publication and that you do what you can to help it along.

Conclusion

In conclusion, allow me to say that I am greatly indebted to Dr. C. R. Ogden for his instructive and encouraging letters, to the members of *The Journal* publication committee for their invaluable advice, and to the councillors and component society secretaries for the prompt and business-like way of reporting and corresponding with the central office. Your executive secretary is also greatly indebted to the various committees with which he has worked.

Relative to my own work, I am enjoying it to the fullest extent and my most profound wish is that I may live up to the expectations of the association.

Financial Statement

Executive Secretary's Office—Year 1926

January	$ 553.13
February	478.28
March	729.88
April	602.95

May	920.88
June	958.21
July	596.03
August	503.26
September	623.67
October	521.60
November	478.60
December	605.87
Total	$7,572.36

Funds received and forwarded to treasurer:

Date	*No. Mem.*	*Amount*
January 23	60	$ 600.00
February 23	97	962.00
March 4	106	1,052.00
April 5	167	1,659.00
May 3	273	2,724.00
May 3	1	10.00
May 13	64	631.00
June 9	107	1,067.00
September 13	52	520.00
November 22	54	477.50
December 7	28	268.00
December 31	40	393.00
Total	1,049	$10,363.50

West Virginia Medical Journal

January 1, 1926 to April 30, 1927

Total receipts		$5,171.36
Total Disbursements	$5,319.88	
Bills Receivable		424.21
Bills payable	320.50	
Cash in bank		53.03
Profit	8.22	
	$5,648.60	$5,648.60

(NOTE: It will be seen that disbursements exceeded collections by a sum of $148.52 during the 16-month period. However, there is a balance of $424.21 represented by approximately $215 due from the Cooperative Medical Advertising Bureau (national advertising agent) for the month of April; $305 due from direct advertising and subscriptions and 53.03, cash in bank.

Report of Treasurer

Dr. T. M. Barber, Charleston

1927

Bal. from Drs. Dunn and Ray	$ 1,121.40	
Excess cash surrender value Dr. Nicholson's Ins. Pol. from John Ray, Atty.	272.73	
Check from S. O. Neale—dues	393.00	
Check from S. O. Neale—dues	1,261.00	
Check from S. O. Neale—dues	1,135.00	
Check from S. O. Neale—dues	4,604.00	
Check from S. O. Neale—dues	1,793.50	
S. O. Neale, bal. due 1926 exp.		95.87
Trav. exp. Council members		199.62
Printing and engraving		287.35
Hogseet & Sheets, work on legis. bills		40.00
A. M. A.—150 Hygeia, Pub. Pol. Comm		22.50
S. O. Neale, Jan. exp. acct.		535.90
S. O. Neale, Feb. exp. acct.		589.72
S. O. Neale, Mch. exp. acct.		712.11
Cit. Nat. Bk.—note payable		600.00
Stenog. Scientific Com.		15.00
Talley—Office supplies		7.20
S. O. Neale, April exp. acct.		377.40
Joe Savage, S. O. Neale, April exp. acct.		479.80
Joe Savage, May exp. acct.		600.95
To Indigent Fund		921.75
To Med. Defense Fund		890.75
Balance on hand		3,204.71
	$9,580.63	$9,580.63
June 20—Bal. in Gen. Fund		$3,204.71
June 20—Bal. in Indigent Fund		921.75
June 20—Bal. in Med. Defense Fund		890.75
Total		$5,017.21

T. M. BARBER, M. D., Treasurer.

Medical Defense Report

1. *Joseph W. Wallace vs. Dr. H. B. Martin*, Huntington, W. Va.:

Claim $10,000 in connection with death of Elizabeth Wallace, May 24, 1926. Copy of declaration in files. Trial set for January 6, 1927. We wrote on January 11, about outcome of trial, had no reply. Fitzpatrick, Brown & Davis, lawyers.

2. *Charles Jackson Drain vs. Dr. William T. Gocke*, Clarksburg, W. Va.:

Claim $25,000 for alleged malpractice in connection with fracture of femur bone in October, 1924. Suit instituted latter part of 1925, judge refused to hear it, sent back for further declaration. Suit brought up again in January, 1927. Declaration and Bill of Particulars in files. The lawyers, Steptoe, Maxwell & Johnson, wrote on March 11, 1927, "There can be no trial before the next May term. Whether it will then be tried depends somewhat on the ruling of the court with respect to a more particular statement of the plaintiff's claim. But you will be advised."

3. *Thomas J. Smith vs. Dr. A. F. Lawson*, Weston, W. Va.:

Claim $20,000 in connection with death of Mary Smith's child, and ill health of Mrs. Smith. Bill of particulars of Feb. 4, 1927, in our files. Trial set for February, postponed. (Mary Smith operated on Jan. 13, 1926, premature birth of child, Feb. 28, 1926.) No correspondence received in this office since March 19, 1927.

4. *Wilbur Gaines vs. Dr. Frank V. Langfitt*, Clarksburg, W. Va.:

Claim $10,000 in connection with alleged malpractice of fracture of right wrist and arm, April 28, 1925, stating that Dr. Langfitt refused to take necessary X-ray pictures, finally took one picture which was not sufficient. Had X-ray picture taken in Charleston, but this office was unable to find record of same in any hospital in Charleston. Bill of particulars in our files, Feb. 18, 1927. No correspondence since March 28, 1927.

Respectfully submitted,
R. H. DUNN,
C. G. MORGAN,
I. D. COLE.

Report on State Home

After considerable study and deliberation on the permanent home for the West Virginia State Medical Association the committee feels that it is very essential that the society have a permanent home in Charleston, West Virginia, where they could be in touch with the legislature and the law enforcement bodies of this state. It has become more and more a problem for the entire association of the state to throw their influence collective against various forms of legislation, and the committee feels that a permanent home in Charleston where the secretary in charge, and a place of meeting sufficiently large to take care of at least 200 members, to house the library and the offices it would be of very great importance. The committee feels that this can be very successfully taken care of at a small cost to begin with and no doubt from time to time various members of the association will leave their libraries and many of them hundreds of dollars for the benefit of the association. As it is there is no way that the members of the association could leave any part of his estate to the West Virginia State Medical Association, as there is no committee to handle it. So we feel that the following resolution be adopted by your association so it will lay the foundation so that a permanent home can be built in Charleston, West Virginia.

Signed,
W. P. BLACK, *Chairman*,
W. B. STEVENS,
C. O. HENRY, Committee.
E. L. ARMBRECHT,

Report of Committee on Public Policy and Legislation

The chairman of the West Virginia State Medical Association's Committee on Public Policy and Legislation called a meeting of the committee which was held in Charleston December 28, 1926. The meeting was attended by Drs. James McClung; Richwood; D. A. MacGregor, Wheeling; R. H. Walker, and R. A. Ireland, Charleston. A full discussion was held on the public policies and proposed laws affecting our association. The reborn Hospital Association of West Virginia was consulted, and they concurred in the acts proposed to be offered in the state legislative session for 1927.

One bright spot in the cloud overhanging the battleground of this year was the passage of our bill for the establishment of a tubercular sanitarium in the southern half of West Virginia. We had the honor to suggest to the Senate Committee that the $216,000 earned and now held by State Hospital No. 1 be diverted to the establishment of a second tubercular sanitarium in this state. This bill became a law.

An amendment was proposed for the present workmen's compensation law making the terms more liberal for the medical men. An important change was to insure compensation fees even though a given case was entitled to care under a "list" contract. It has been found that injured cases were sometimes hurried out of "list" hospitals because, under the present law no compensation can be paid, and there is sometimes the temptation to save cost even at the expense of permanent injury. This amendment will need all the pressure that all of the profession can exert to get by the present alignment of statesmen.

An act was proposed, raising the standards of education required of midwives. The committee believes that no individual should do this major work until that individual has at least the education and training required of a graduate nurse. This standard was opposed by representatives of the State Department of Health, and the bill was defeated.

An amendment was proposed to the law regulating nurses' examinations. The amendment required that there should be two physicians as members of this board of examiners who are actively connected with the staff of some hospital. This act was lost in the mass of bills that were forgotten in the final confusion of the closing days of the legislature.

An amendment was proposed to the chiropractic law separating the chiropractors from the health council. This amendment was opposed by the executive officer of the State Health Council. The bill was defeated probably because of the attitude of the state health department.

An amendment was offered to the present law protecting hotels by inserting the words, "hospitals, sanitariums and sanatoriums," so that our institutions might in some measure be protected from those who enter with intent to defraud. This was not to apply to X-ray, laboratory, or doctors' fees. By a strong concerted effort this bill was recalled in the House, after being once rejected, and passed the House without dissenting voice. Sufficient sentiment was worked up in the Senate to pass this act, but it was defeated because of the opposition of the floor leader. This senator was on the rules committee, and had sufficient influence to keep our bill in the bottom of the basket; and in the final rush it could not be called up.

One group of citizens asked the legislature the right to pray and heal the sick by spiritual means "only." It seems to the committee that such an act might interfere with the present regulations against typhoid fever, small-pox and similar diseases. It would give protection to their system of collecting fees. The bill was defeated.

An act was proposed, making it possible for everyone injured in dangerous occupations to be treated free at the state hospitals. This service was to be extended to minors under the age of 18 whether injured or not. The bill was defeated.

Among the bills that met with our disapproval was one which proposed to limit the hours of duty for nurses to eight hours in any one day. This was defeated also.

We spoke before the Senate Committee in opposition to the Sheppard-Towner act and its application to the activities of health work in this state.

We sent numerous letters and telegrams to component societies, hospitals and individuals apprizing them of the struggles going on in Charleston during the time of the legislative session.

We were advised and helped by the former chairman of this committee, Dr. C. A. Ray.

Much valuable influence was contributed from all parts of the state, and for this the committee is very grateful. Much credit is also due to the members of our profession in both branches of the legislature. They fought valiantly, and while they did not secure the passage of all the bills they fought for, it is due our friends both within and without the profession in the legislature to give them a vote of thanks for securing the passage of the act creating another tubercular sanitarium, and for the defeat of some of the senseless and destructive legislation that might bring discredit to our state.

Respectfully submitted,
R. A. IRELAND,
G. A. MCQUEEN,
R. H. WALKER,
JAMES MCCLUNG,
C. R. OGDEN,
D. A. MACGREGOR.

Report of Committee on Publication

Shortly after January 1, 1927, it became apparent to the committee that Mr. S. O. Neale, executive secretary, was neglecting his duties and conducting himself in a manner unbecoming that of his position. The committee held a meeting in Huntington on March 23, at which were present Drs. Vest, Hall, Bloss and Ray, and it was decided to dispense with his services as secretary as soon as it was practical, which was accordingly done, and the action of the committee was approved by each member of the Council and President through communication by mail.

After having all books of the office audited by an expert accountant, and all

arrears paid up in full, Mr. Neale was formally relieved of all duties on April 30, 1927.

Mr. Joe W. Savage of Charleston was employed to succeed Mr. Neale, and took full charge of the office on May 1, 1927.

PUBLICATION COMMITTEE.

Report of Attorney

June 17, 1927.

Dr. R. H. Dunn,
Dr. C. A. Ray,
Members of a Special Committee
of the Council of The West Virginia
State Medical Association,
Charleston, W. Va.

Gentlemen: In complying with your request that I give you a written report of the present status of the Nicholson bankruptcy proceedings I am very sorry I cannot give you a definite answer to the question in which the members of your Council are most interested, namely, what dividend is the West Virginia State Medical Association going to receive out of the Nicholson bankruptcy estate?

The three principal causes of the delay in ascertaining the answer to this question are as follows:

1. The contest waged in the bankruptcy proceedings by the Security Bank and Trust Company and the Metropolitan Life Insurance Company, creditors of Dr. Nicholson who had deed of trust liens on the Bradford street and Ravina Drive residence properties to obtain authority to have these properties sold by the Trustees named in their deeds of trust and not by the Trustee in Bankruptcy:

If these properties had been sold by the Trustees in the deeds of trust they would have been auctioned off and probably would have gone for a fraction of their value, as did the unimproved tract of land sold under a trust deed sale just before the bankruptcy proceedings were instituted. Whereas the Trustee in Bankruptcy would sell them at private sale for the best price that could possibly be obtained. For these reasons I have done everything possible to prevent the properties being sold under deeds of trust sales. I believe I reported to you last year that I had obtained an injunction from the local Federal Court prohibiting sales under trust deeds to be held. This decision was appealed from and the case was heard by the Circuit Court of Appeals in Richmond. The Trustee in Bankruptcy was represented there by an attorney who filed a brief and made an oral argument, and this court affirmed the decision of the District Court. An appeal was then taken to the Supreme Court of the United States, which court decided about sixty days ago that our contention in this matter was correct and that these properties should be sold by the Trustee in Bankruptcy. This litigation has taken nearly a year and has been rather costly, but it could not be avoided and while it was pending the Trustee in Bankruptcy could make no effort to sell these two properties.

2. The difficulty of selling real estate in Charleston at this time:

As stated above the Bradford street and Ravina Drive residence properties have been involved in litigation in the Federal Courts during the greater part of the past year, and the Trustee in Bankruptcy could make no effort to dispose of them. Since that litigation was decided in favor of the Trustee in Bankruptcy the Trustee has disposed of the Bradford street property at what is considered to be a satisfactory price. The Trustee got no money out of this transaction for the general creditors but he satisfied the liens against the property out of what he got for it, which liens were probably greater than its present market value.

The Trustee in Bankruptcy has been unable to sell the Ravina Drive property. This is the piece of property out of which it was hoped a substantial amount would be obtained for the general creditors. It has trust deed liens on it aggregating about $13,000, and it was hoped that the Trustee in Bankruptcy would get at least $20,000 for it, and thereby have $7,000 for the general creditors. Since the Trustee has been authorized to sell, the best offer he has received has been $16,000. I have insisted that the property should not be sold for less than $18,000, but of course, there is nothing to compel the Referee and Trustee to comply with my wishes in the matter. I understand that a prospect is looking at this property today, from whom it is hoped to obtain an offer of from $18,000 to $20,000. If such an offer is obtained the property will undoubtedly be sold, for it is extremely difficult to sell real estate in Charleston at this time.

The Trustee in Bankruptcy has been unable to sell the unimproved property known as Ravina Park for enough to pay the purchase money liens against it. He has been free to sell this property ever since he was appointed and he has diligently tried to obtain a purchaser or purchasers for it, but he has been unable to find anybody who would pay the balance Dr. Nicholson owes on it. At the last creditors' meeting the parties who sold this property to Dr. Nicholson and who held unpaid purchase money notes were advised that if the Trustee had been unable to dispose of the property by the time he sold the Ravina Drive and Bradford street residence properties, this unimproved property would be turned back to them in satisfaction of their claim against it.

From the above it will be seen that the only hope of realizing anything from Dr. Nicholson's real estate lies in getting a good price for the Ravina Drive property and I renew my suggestion that all doctors in or near Charleston should make an effort to help find a purchaser for this residence willing and able to pay a good price therefor.

3. The Referee in Bankruptcy has not decided whether the association will receive all the money realized from the property in which the association's money was invested or whether it will receive only its pro rata share. The Referee has felt that it would serve no useful purpose to go into this question until some of this property had been sold for more than the liens against it, and a fund existed to be distributed. This question will not hold up the closing of the estate very long after the property is sold.

Out of the personal property of Dr. Nicholson the Trustee in Bankruptcy has got about $5,000, and I understand he has another note for $2,000 not yet due, but which is collectible, which will mean a total of about $7,000. If he succeeds in getting as much as $5,000 for the general creditors out of the Ravina Drive property, he will have a total of about $12,000 and out of this the state association should get about $5,000. If the Ravina Drive property is sacrificed, of course, the state association will not get that much but if it should by any chance bring a good price the association will receive more. If the Referee gives all the proceeds of the property into which the association's money went to the association the association's dividend may reach $8,000 or $9,000. The closest answer I can give to the question in which you are most interested then is the same that I gave you a year ago, i. e. The Association should certainly receive between $3,000 and $4,000 in dividends, and may possibly receive $8,000 or $9,000.

The only other matter upon which I think I need report is the question of Dr. Nicholson's insurance. You will recall that at a meeting of the Council held in June, 1926, in Charleston, a resolution was adopted which provided that claims should not be filed with the surety companies if Dr. Nicholson executed a certain note for $20,000 and took out a $25,000 life insurance policy, and made suitable arrangements for paying the premiums on the said policy. The note was executed and the insurance policy was taken out, and the association advanced the annual premium, with the understanding that Dr. Nicholson would make monthly payments to the association to repay this first annual premium, and build up a fund with which to pay the second annual premium. Dr. Nicholson has failed to make these monthly payments. You are as well acquainted with his reasons for failing to make these payments as I. I can only say that I went to see him about thirty days ago and personally told him that I felt it would be disastrous for me to be compelled to report to you that he had failed to make any of these monthly payments; that he should by all means make some arrangements to take care of the second annual premium on his policy when it becomes due. About two weeks later I wrote him a letter requesting him to advise me what arrangements he had made, and a few days ago he called me on the 'phone and said he had arranged to get the money, provided he could get proper endorsement, and that he was then trying to get that fixed up. He promised to call me back but he has not done so. My personal opinion with regard to this life insurance is that the association should carry it another year, but that the association should put sufficient pressure upon Dr. Nicholson and his family to make them take care of these life insurance premiums. I cannot but believe that if a small committee composed of members who are not embarrassed by a long friendship with Dr. Nicholson were to go to him and forcibly acquaint him with the fact that the association meant business and that he was not immune from prosecution, Dr. Nicholson and his family would discover some means to pay these premiums. The premium is only about $100 per month, and if this life insurance policy is kept alive the association will in time obtain its entire debt, with interest thereon.

If the Trustee in Bankruptcy should be successful in disposing of the Ravina Drive property within the next few days I will try to get a supplemental report to you in time for the annual meeting of your association, for when that property is sold I can make an approximate calculation of the dividend that will be received.

Respectfully submitted,

R:L JOHN V. RAY.

Report of Committee on Necrology

The Committee on Necrology has the sad duty of reporting to this body the untimely death of the following respected and honored members of our profession:

H. Lon Carter, Madison.
Florence B. Evers, Martinsburg.
Samuel R. Fairchild, Elkridge.
A. N. Frame, Parkersburg.
E. H. Martin, Harrisville.
J. H. McConihay, Charleston.
A. M. Reid, Charleston.
C. C. Rusmisel, Gassaway.
P. C. Showalter, Clarksburg.
W. W. Smith, Minden,
P. H. Swann, Huntington.
Charles B. Waggener, Arbuckle.
O. W. Lusher, Pt. Pleasant.
Luther Haymond, Clarksburg.
T. C. McClung, Rupert.
S. H. Austin, Lewisburg.
James M. Lovett, Huntington.
David Shirkey, Charleston.
J. W. Livesay, Clarksburg.

Dr. Bosworth Oldest Living V. M. I. Graduate

Dr. John W. Bosworth, son of Dr. Squire and Hannah Bosworth, was born at Beverly, Randolph county, then Virginia, on September 3, 1836. At the age of 17 he was appointed State Cadet to the Virginia Military Institute at Lexington, Virginia, by General Thos. J. ("Stonewall") Jackson. Graduating in four years, he was granted only one leave of absence during this time, according to the existing regulations. He is at present the oldest living graduate of that famous school which is well named the "West Point of the South."

He then entered the Jefferson Medical School in Philadelphia, and was under the teaching of the famed Dr. Gross until the war between the States broke out, when he joined the Southern army, served four years, rose to the rank of lieutenant in 31st Virginia Regiment, was wounded and captured at Fort Steadman near Petersburg, Va., in the last year of the war and placed in Fort Delaware prison for 6 months. Released from prison he returned home and in 1866 was married to Miss Martha E. Dold, daughter of the late Dr. and Mrs. Addison Dold of Fishersville, Virginia. His only child, Annie M. Bosworth, was born March 15, 1872 and in 1898 was married to Dr. C. B. Williams.

DR. J. W. BOSWORTH
Philippi, W. Va.

In 1868 Dr. Bosworth located in Philippi for the practice of his chosen profession, and since that time served the people of Barbour and adjoining counties. For years he was associated with Dr. Elam D. Talbott, one of the pioneers in medicine in the Tygarts Valley. Though modest, unassuming and retiring to a degree, he has impressed his personality on the people of this section, and everywhere one goes throughout this county, Dr. Bosworth is spoken of in the highest terms of love and respect, by the rich and poor alike. Like doctors of the old school, while he was in active practice, no call to duty went unheeded when it was physically possible for him to attend.

He has been a faithful and consistent Odd Fellow for well over fifty years, and at present never misses a meeting unless he is ill, and he holds the office of secretary, which he has held for years. He was grand representative to the Sovereign Grand Lodge for four years in succession. As a life long Democrat he has always stood high in the councils of his party, seeking no other honors.

Being a descendant of true Scotch-Irish Presbyterians he is a pillar in the Philippi Presbyterian church and a most regular attendant. May it fall to the lot of the physicians of the "Little Mountain State" to be able, like Dr. Bosworth, to look back upon a life well spent in service to mankind, and when the final summons comes, to hear, as he surely will, "Well done, thou good and faithful servant."

Dr. Boyers Succumbs

The Journal has the sad duty of announcing the death in Fairmont on July 2 of Dr. W. F. Boyers, a member of the West Virginia State Medical Association since 1909. Dr. Boyers was born in 1872 and was 55 years of age. He had always taken an active part in the work of the state organization.

Dr. Boyers was graduated from the Barnes Medical College of St. Louis in 1896 and was admitted the same year to practice medicine in West Virginia. His membership with the state association has always been through the Marion County Medical Society. He leaves a large group of friends and admirers in northern West Virginia.

Correction

In announcing the committee on Scientific Work in the July number of the *West Virginia Medical Journal*, the address of Dr. Albert Hoge was given as Huntington. Dr. Hoge resides in Bluefield and is a member of the Mercer County Medical Society.

Death Claims Dr. Hyer

The Journal has just received word of the death of Dr. John E. Hyer of Curtin, W. Va., who succumbed at 6 o'clock on the evening of July 5 at the McClung hospital at Richwood. Death was caused by acute uraemia.

Dr. Hyer has been an active member of the West Virginia State Medical Association since 1909 and was one of the outstanding physicians of central West Virginia. He graduated from Louisville University in 1892 and was shortly afterward admitted to practice in West Virginia. His death was a sad blow to his host of friends and associates in this state. The deceased was buried at Flatwoods, W. Va., on July 8.

The sum of $200,000 has recently been contributed to the Ohio Valley General hospital by the children of S. S. Bloch, Wheeling tobacco manufacturer, according to a news story appearing in the *Wheeling Register*. The donors were Mrs. Dorothy B. Hirsch and Mrs. Madelyne B. Zeigler of New York City, and Jesse A. Bloch and Harold S. Bloch.

WOMAN'S AUXILIARY

JUNE 20, 1927

The executive meeting of the Woman's Auxiliary of the West Virginia State Medical Association was held at 9:15 p. m. on the evening of June 20, 1927, at the Greenbrier Hotel, White Sulphur Springs, W. Va. Nine members were present and Mrs. B. S. Preston of Charleston, president of the auxiliary, presided.

A nominating committee consisting of Mrs. A. G. Rutherford of Welch, Mrs. T. L. Harris of Parkersburg, Mrs. G. P. Fisher of Kayford, Mrs. McRae Banks of Raleigh county and Mrs. James R. Bloss of Huntington was chosen from the members present.

JUNE 21

The third annual meeting of the Woman's Auxiliary was called to order at 9 o'clock on the morning of June 21 by Mrs. Preston, who also rendered the invocation. Following this an interesting talk was given by Mrs. Southgate Leigh of Norfolk, Va., president of the Woman's Auxiliary of the Virginia Medical Society.

The minutes of the last meeting at Morgantown on May 25-27, 1926, were read by the secretary, Mrs. C. M. Scott of Bluefield, followed by the report of delegates and the roll call by counties.

The meeting reconvened at 3 o'clock on the same afternoon when the report of delegates was continued. At this meeting, Miss Sarah Murray, R. N., public health nurse for Greenbrier county, entertained the auxiliary with a very instructive talk on public health work.

Immediately after the address by Miss Murray, Mrs. Preston appointed Mrs. J. P.

Lilly of Morgantown as state chairman of *Hygeia* and this was followed by a report by Mrs. Scott on the activities and condition of the auxiliary. Mrs. Scott said that the membership had reached 201 at the present time.

JUNE 22

The meeting of June 22 was featured by an address by Miss Ada L. Coddington of Charleston in which she made a partial report of activities of the state health department.

The meeting was called to order by Mrs. Preston who carried on a short discussion on the educational program of the auxiliary. This was followed by a round table discussion led by Mrs. R. V. Shanklin of Gary on methods of increasing membership. Mrs. W. H. St. Clair of Bluefield talked briefly on suggestions for county auxiliary programs. Mrs. Lilly also gave a short talk on *Hygeia* and asked for additional subscriptions to the magazine.

Dr. David Littlejohn of the state health department discussed at some length the public health program in West Virginia and urged that the members of the auxiliary take a more active part in public health work. It was upon his suggestion that the auxiliary decided to send a delegate to the public health meeting at Wheeling.

Mrs. C. M. Scott of Bluefield was nominated and elected as a delegate to the state public health meeting to be held in Wheeling in November.

The report of the nominating committee was called for and was unanimously adopted. The following officers were elected for the coming year: President, Mrs. R. V. Shanklin of Gary, vice president, Mrs. T. H. Harris of Parkersburg, secretary, Mrs. W. C. Swann of Huntington, treasurer, Mrs. W. D. Simmons of Slab Fork.

The afternoon session opened with a talk on "Echoes from Washington," by Mrs. Lilly of Morgantown, who also reported further activities in connection with *Hygeia*.

A recommendation made by Mrs. M. I. Mendeloff of Charleston and seconded by Mrs. A. G. Rutherford of Welch was accepted in which the Woman's Auxiliary went on record as sponsoring the movement for a home for the feeble-minded in West Virginia.

Mrs. Ralph Maxwell of Morgantown was selected as councillor for the second district Mrs. J. R. Bloss of Huntington for the fourth district, Mrs. A. G. Rutherford of Welch for the fifth district and Mrs. E. S Dupuy of Beckley for the sixth state district. Mrs. H. D. Price of Parkersburg was appointed as counsellor for the fourth district to fill out the unexpired term of Mrs. W. C. Swann of Huntington and Mrs. W. B. Young of Elkhorn was appointed for the fifth district to fill out the unexpired term of Mrs. R. V. Shanklin of Gary.

At the request of the president, Mrs. M. I. Mendeloff took the chair and Mrs. Preston suggested that the auxiliary pay the traveling expenses of the state president and organizer in going over the state on auxiliary business. It was moved by Mrs. R. V. Shanklin and carried that such expense be set aside.

At the final meeting of the executive board article eight of the constitution was changed upon motion of Mrs. Mendeloff to provide one delegate in each county auxiliary for each 10 members instead of each 15 members. This motion was seconded by Mrs. Swann of Huntington. The meeting then adjourned to meet in Fairmont in May, 1928.

Respectfully submitted,
MRS. C. M. SCOTT, *Secretary*.

REGISTRATION

Executive board: Mrs. B. S. Preston, Charleston; Mrs. W. H. St. Clair, Bluefield; Mrs. J. P. Lilly, Morgantown; Mrs. C. M. Scott, Bluefield; Mrs C. A. Ray, Charleston; Mrs. R. V. Shanklin, Gary; Mrs. W. C. Swann, Huntington; Mrs. R. O. Rogers, Bluefield; Mrs M. I. Mendeloff, Charleston.

Delegates: Mrs. W. C. Swann, Huntington; Mrs. Walter D. Simmons, Slab Fork; Mrs. Thomas Harris, Parkersburg; Mrs. T. S. Barber, Charleston; Mrs. M. I. Mendeloff, Charleston; Mrs. J. P. Champ, Charleston; Mrs. G. R. Maxwell, Morgantown; Mrs. V. T. Churchman, Jr., Charleston.

There were 28 members and 50 visitors of the auxiliary registered at the third annual meeting.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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THE DIAGNOSIS OF ABDOMINAL CONDITIONS AND SURGICAL PATHOLOGY IN THE UPPER ABDOMEN *

By CHAS. GORDON HEYD, B.A., M.D., F.A.C.S.

Professor of Surgery

New York Post-Graduate Medical School and Hospital

IN A CONSIDERATION of the gastro-intestinal tract one is apt to think of clinical entities and not regard the alimentary canal as a complete system with a very intimate neuro-muscular mechanism and capable of the most profound and diverse reflex manifestations.

The gastro-intestinal tract is not a rigid pipe but a living, autonomous, contractile tube. It has independent, self-initiated contractility, controlled and coordinated by certain nodal points of highly organized nervous tissue, not unlike nodal tissue of the heart. The neurogenous elements for conduction and harmonious coordination between nodal centers probably reside in Auerbach's plexus. Throughout this tube there are exhibited variations in the contractile rate, the amplitude of contraction and the tone of contraction. Material passes from an area of high tone, rhythmicity and contractility to an area of less rhythmicity, contractility and tone.

Under ordinary or normal conditions the passage of material through the gut tube is progressive with certain points of normal stasis. These points of normal stasis are physiological barriers and created for the purpose of retarding the contents for the more complete digestive or assimilative processes.

The pylorus and ileocecal valve represent the natural or physiological barriers to the too rapid passage of material. The chyme is held orad by pyloric or antral contraction: the chyle is held orad by the ileocecal sphincter yet the passage at both points is open and free. Wherever the gastro-intestinal tube is irritated or the site of organic

* Abstract of an address before the Central Tri-State Medical Society, Huntington, W. Va., April 28, 1927.

changes, we have a change in the irritability of the gut tube above and below the point of irritation. Irritation in the region of a normal sphincter produces exaggerated tonus with a more or less permanent shortening and contraction of the individual muscle fibres. The result from such a mechanism is to delay the material advancing toward the point of irritation and to accelerate the material leaving the point of irritation. It is a striking fact that everywhere throughout the foregut there is a multiplicity of digestive enzymes. It would seem that so far as secretory activity is concerned there is always a plurality of digestive juices. Various digestive enzymes are thrown out at different portions of the foregut and in a different chemical medium, all however of more or less specificity, yet capable of vicariously assuming the digestive function of the others. The earlier years of this century, in so far as gastroenterology is concerned, were taken up with an elaboration of the variations, the preparation of tables, of statistical data on the diverse chemical secretions of the gastro-intestinal tube. The second decade has shown, through the intervention of surgery, the relationship of pathologic conditions of the gastro-intestinal tract of disturbances in gastro-intestinal function. The maintenance of an effective digestive apparatus depends primarily upon the muscular efficiency of the gut tube. In the production of symptoms an interference with muscular or motor efficiency of the tube outranks any of the disturbances that are primarily due to lack of secretory function. There are many digestive enzymes. There is only one tube with muscular contraction and coordination. Physiologically the gut tube may exhibit motor deficiencies in at least four ways: (1) a retardation of contents, (2) acceleration of contents, (3) stasis or stagnation, and (4) obstruction. It follows then that the symptoms of gastro-intestinal disturbance are largely those of motor dysfunction or inefficiency of muscular activity.

In connection with the interpretation of gastro-intestinal symptomatology it is essential that we distinguish symptoms that are the result of functional disturbances of the gut tube and symptoms that are the result of organic change. In a consideration of abdominal pain it is important to differentiate the pain of sudden, acute onset of neuromuscular mechanism and the pain that is due to gross organic changes in the tissue integrity of the part. The latter is constant, is associated with inflammation and exudation or new growth and is essentially a biotic phenomenon and always requiring a definite interval of time for its production. We might differentiate, therefore, affections that manifest themselves by aberrations in normal functions and those that manifest themselves by actual organic change. At the outset it is well to bear in mind two more or less general propositions. The first is the "law of probability," which in a large series has the accuracy of a mathematical certainty. It is employed constantly by life insurance companies and is of the utmost importance in abdominal diagnosis, for, by the application of this law to a large series of cases, we are able to derive a symptomatology that within its group has much of the certainty of a percentage of probability. There is a second law, which we may refer to as the law of average localization of visceral pain. The brain, accustomed to receiving stimuli, acquires the ability to refer visceral pain to average locations upon the anterior abdominal wall. That is why the abdominal localization of pain is most accurate in viscera which do not move, such as the gall bladder, duodenum, ascending and descending colon, and rectum, and is more or less inaccurate in the much more freely movable small intestines and stomach.

The gut tube from the mouth to the anus is biologically the oldest organ. In its evolution from Amphioxus to Homo this tube has shown divarication in morphology and function. Moreover, the alimentary tract is capable of performing its functions without any nerve connection or attachment to the cerebral spinal system and the growth into the intestinal tract of nerves, either from the higher cerebral centers or from the spinal cord, was a comparatively recent acquisition. It is interesting to speculate at this time as to whether that mysterious disease of civilization—neurasthenia—is not

due to aberrations of this most recent and unstable nervous connection.

The gastro-intestinal tract for functional efficiency is physiologically divided into various segments and these segments are capable of their own intrinsic activity or of moving harmoniously and synchronously with the remainder of the tract. We may divide this tube into three main portions on the basis of their embryonic origin: (1) the foregut—from the pharynx to just beyond the ampulla of Vater, and containing within its limits the elaboration of all the chemical and digestive enzymes; (2) the midgut—from approximately the ampulla of Vater to the ascending colon and concerning itself with the assimilative processes of digestion; (3) the hindgut—from the ascending colon to the anus, concerning itself with dehydration and elimination.

At this point we can consider the so-called nodal points of Keith, four of which have been identified, and four others predicated. Considerable argument has arisen as to the exact function of these nodal points. One school of physiologists maintains that they are essentially alimentary bundles of His, capable of initiating peristalsis and in addition, controlling muscular tonicity and rhythm. Another school maintains that this bundle exercises no such function but that each individual segment of the intestine is capable of initiating its own movement and that there is a certain gradient of contractility that is peculiar to such segment.

In any event, from a clinical point of view the disturbance of one segment of the alimentary tract is capable of initiating conditions of disturbed function either above or below the point of irritation.

In the lesser forms of animals the gut tube occupies a midline position, parallel to what will subsequently be either notocord, or the spinal column, and this parallelism in the position of the intestine and the spinal cord is not without its clinical significance.

When we consider the gastro-intestinal tract we are confronted with two outstanding features. First, that in a physiological way the gut tube shows variations in its motor function and in its secretory function. The former is by all means the most important. Or, secondly, the gut tube shows changes that are the result of organic or inflammatory conditions. It is well then to distinguish the symptoms that represent disturbed function as opposed to symptoms that represent inflammation, organic change and peritoneal exudation.

The symptoms of disturbed function of the gastro-intestinal tract are ordinarily ascribed to the abdominal surface of the body and in a midline position. Distress from the esophagus is localized to either side of the sternum and beneath its lower half; distress due to functional disturbance of the stomach, beneath the ensiform and midway to the navel; distress due to functional disturbance of the small intestine in the midline, midway between navel and ensiform and midway between navel and symphysis and distress due to functional disturbance of the large intestine from midway below the navel to the symphysis.

The characteristic and outstanding feature of pure functional disturbance is the intermittency of the symptoms, and the most outstanding feature of organic change is the constant character of the disturbance and the absence of intermittency. The mechanism of production for these two main symptom groups is entirely different. The former represents an altered state of function while the latter represents the fixed physical condition of inflammatory organic change or exudate into the peritoneal cavity.

The symptomatology of acute appendicitis exhibits in a striking manner both these types of symptoms. Incidentally, acute appendicitis is one of the prolific causes of mortalities in a general hospital at the present time. An acute, gangrenous, perforated appendicitis is today outstanding in its importance as a factor in the mortality statistics of a surgical hospital.

The appendix, by reason of it being a blind tube with a narrow aperture into the cecum, is prone to stasis, infection and inflammation. The appendix must evacuate its contents just the same as the large bowel and therefore the presence of fecoliths in an appendix is proof positive that there has been an inspissation of feces with mold-

ing of the concentrated stool into fecoliths. In no condition in the abdomen is the parallelism between pathological changes and the symptomatology more exact than in appendicitis. Infection beginning in the appendix is associated with stenosis of the lumen, either by kinking or by turgescence. There results an empyema and the retention of the products of infection under tension. Shortly thereafter a pentration of the submucous layers of the appendix takes place with the development of peri-appendiceal inflammation. In the early stages this inflammatory reaction is associated with a clear, non-infected peritoneal fluid to be followed shortly by fibrinoplastic material with a walling off of the area. Later perforation—minute or gross—ensues with varying degrees of gangrene. The initiatory symptoms of acute appendicitis is pain. This pain is colicky in type, epigastric in location and has a crescendo of intensity, with a rapid decline and a clear interval. In a few moments there is a typical recurrence of this pain syndrome. At the same time there is a sensation of nausea, vomiting or both. This pain is distinctly paroxysmal, generalized and due to overactivity of the small intestine. There may or may not be temperature although there usually is fever of some degree, if determined by rectum Leukocytosis and polynuclears are beginning to be present. The infection within the appendix may resolve by drainage back into the cecum with a normal or natural cure, or the inflammation becomes progressively worse with perforation and gangrene. The moment that the serosal surface of the appendix is reached or perforated there is a change in the character of the symptomatology. Pain from this time on is due to the exudative processes around the appendix. It is constant in character, associated with immobility of bodily posture, with localized tenderness, localized spasm, localized resistance, while nausea and vomiting are usually absent. Temperature is ordinarily present while leukocytosis and polynecleosis are constantly present and increasing.

In regard to chronic appendicitis, one is frankly in a dilemma. By analogy we assume that conditions of local inflammation in the appendix are similar to infection in the tonsils and that there may be an absence of distinctly local signs and yet have symptoms from absorption. The neuritis, the myositis, the arthritis, the nephropathies of tonsillar origin are sufficiently frequent to make this hypothesis tenable. I personally am not convinced that localized tenderness is of much importance in the diagnosis of chronic appendicitis. Again I am in doubt as to the value of a previous history of acute attacks in indicating the appendix as the cause of the trouble. When food material is passed from the stomach into the duodenum, there is at the same time, or shortly thereafter, the passage of material from the ileum into the cecum and the ileocecal valve mechanism is not so important in preventing reflux from the cecum into the ileum as it is in retaining ileal contents in the small intestine, within the limits of physiological stasis. Irritations of the cecum of whatever character are extremely prone to disturb the neuromuscular mechanism that exists between the pylorus and the ileocecal valve region and as a result pylorospasm is a frequent concomitant of irritability of the cecum and appendix. The outstanding feature of spasm is its intermittency as opposed to the constant character of the symptoms from inflammation and infection. If spasm is dependent upon stimulation by an irritable nerve, then from the nature of its production it follows that an individual with a pylorospasm has clear intervals with complete freedom from distress, interludes of a week to a month to six weeks, or longer, in which gastric digestion is symptomless and apparently without distress. This is in striking distinction to the indigestion of ulcer and the indigestion of gall bladder disease. We have learned that the products of infection of the appendix can reach the upper abdomen by three routes: (1) the vascular route through the portal system. The repeated demonstration of septic pylephlebitis and multiple abscesses of the liver in acute gangrenous appendicitis is sufficient proof of this means, for if the liver be infected in acute conditions then

that same avenue of transportation may be present in states lacking acuteness and altogether chronic in type. (2) The demonstration of the lymphatic connection between the ileocecal angle and the subpyloric glands. The introduction of infectious material or dyes into the lower peritoneal cavity shows the lymphatic connection to the pancreas, to the second portion of the duodenum and to the subpyloric ring region of the stomach. (3) Direct extension by continuity of surface. We feel therefore that chronic appendicitis is more frequently characterized by gastric distress due to pylorospasm and that the symptoms are those of pain in the epigastrium, hypersecretion, nausea and repeated vomiting, and with interludes of complete remission of symptoms.

On laparotomy the operator can distinguish certain gastric stigmata indicative of inflammatory condition of the appendix. The stigmata are (1) an unusual tumultous contraction of the antrum even with the patient fully anesthetized; (2) remarkable hypervascularization of the terminal portion of the stomach and pylorus; (3) swollen hypertrophied, hyperplastic glands of the subpyloric group, and (4) the presence of thin, filamentous spiderweb bands across the first portion of duodenum and pylorus.

Indigestion, *per se*, is probably the most commonplace symptom in the entire realm of medicine. The most frequent causes of indigestion are due to diseased conditions entirely remote from the abdomen—heart disease, tuberculosis, kidney disease, immediately suggest themselves and more recently, poisoning from all kinds of concoctions masquerading as liquor. The second most common cause of indigestion is due to conditions within the abdomen but remote from the stomach, such as the appendix, the gall bladder, the large intestinal tumors and pelvic conditions. Least in frequency as the cause for indigestion is actual intrinsic disease of the stomach and duodenum.

Ulcer of the gastro-duodenal segment means a chronic pathologic change in the wall of the viscus characterized by ulceration and infiltration. As the ulcer approaches the serosa, peritoneal exudation and local peritonitis follow. Ulcer carries with it two grave types of accident, perforation and hemorrhage. The fact that an ulcer is an actual organic change means that when it is in a symptom-producing stage the symptoms are constant and recur day after day, with a definite time sequence. Therefore an ulcer history is characteristic and its symptomatology is noteworthy for the regularity in which the symptoms occur. The symptoms of an indigestion due to ulcer are pain; the pain follows the ingestion of food in a definite sequence; the pain recurs day after day at the same time. When a patient with a history of a regular indigestion loses this sequence of symptoms the chances are about 90 per cent that the condition has changed into a malignancy.

When we survey the gastro-intestinal tract we are impressed with the fact that in the scheme of Nature there are normal points of stasis. For example, at the pylorus, at the ileocecal sphincter and at the recto-sigmoidal juncture we have normal points of stasis. In the gall bladder we have also a point of natural or physiological stasis and we might well question if it is not possible for a physiological state of stasis to become lengthened out into a condition with distinct pathogenesis. In other words, we may pass from a physiological stasis into a pathological stasis.

The bile on its way from the gall bladder to the cystic duct does not re-enter the hepatic duct, as the latter is closed by the mechanical pressure caused by the acute angle at which the cystic duct joins the common duct. The sigmoidal curve of the cystic duct and configuration of the neck and ampulla of the gall bladder prevent overdistention and explain the mechanism of "white bile" or pressure acholia referred by Erdmann and Heyd.

The fact that Nature planned an intermittent delivery of bile into the duodenum must have a reason. In the fasting state the duodenum is free from bile. Therefore, it must be conceded that in the absence of gastric contents bile should not be present in the duodenum. This is a functional advantage to the individual and represents a

protective mechanism in order to have the duodenum empty of bile when there is no physiological demand for it. Morphologically, the bile is delivered just at the partition between acid and alkaline digestion, at the point of transformation of chemical activity from an acid to an alkaline medium. The evacuation of gastric material in small amounts and at frequent intervals corresponding to the relaxation of the sphincter of Oddi clearly predicates that the bile will be delivered into the duodenum in response to the normal physiological demand.

The bile is not purely an excretion, for the bile salts are reabsorbed and undergo a more or less continuous circulation. One has only to recall the very marked improvement that takes place in patients who are losing bile through common duct drainage when they are fed their own bile. So impressed are we that in all cases of common duct drainage we feed the patients their own bile. Cokeman shows that soon after a biliary fistula has been established the salts in the bile fall to one-tenth of the normal since re-absorption cannot occur. This suggests that normally bile salts are excreted and reabsorbed ten times before being destroyed or eliminated.

Bile is, therefore, delivered into the duodenum as the summation of three factors: the hepatic secretory pressure, the expulsive force of the gall bladder plus the action of respiration with the ascent and descent of the diaphragm providing a milking action. The maximum pressure exerted by the three is insufficient to overcome the tonicity of the sphincter of Oddi unless another factor is brought into play, namely, the relaxation of the sphincter. It would seem that as the gall bladder is incapable of completely emptying itself (in an examination of several hundred cadavers we have never seen an empty gall bladder) it may be supposed that as the gall bladder becomes distended it becomes supersensitive to further distention and initiates a neuromuscular reflex which induces the reciprocal half of the reaction, namely, the relaxation of the sphincter of Oddi. When the gall bladder is absent naturally or after cholecystectomy the one-half of this relationship is lost and the stimuli for the alternate contraction and relaxation of the sphincter is absent. Accordingly, the sphincter ceases to function in the mechanism of biliary delivery so that in the cholecystectomized animal the biliary delivery is continuous and the change from intermittent delivery to a continuous delivery has been obtained by the extirpation of the gall bladder.

Repeated dissections in animals without a gall bladder show that the muscle fibers of the sphincter of Oddi are at all times present but not active and in humans with an incomplete or partial cholecystectomy there is formed an artificial gall bladder or the cystic duct dilates into an adventitious gall bladder or diverticuli are formed throughout the ducts. In such cases we find that the sphincter regains its function and the intermittency of biliary delivery is again called forth.

The gall bladder always appears as a somewhat mystic and romantic organ. Its presence in certain animals and its absence in others; the fact that the human can go through life without the gall bladder and have no demonstrable changes in functional capacity presupposes a variety of activities. Out of the welter of literature two facts seem to emerge: (1) that the gall bladder is capable of concentrating bile; (2) the gall bladder, when normal, functions as a rubber ball, with a so-called elastic rebound. Whatever may be the route by which infection reaches the gall bladder the changes that occur are not intra-vesical but always mural. Increasing experience shows that in the infected gall bladder, with or without calculi, the pathologic evidences of disease extend far beneath the mucosa out to the serosa. The fact that there is no anatomical barrier between the lymphatics of the gall bladder and liver allows us to interpret many of the operative conditions in which the liver seems to be more definitely injured than the gall bladder or vice versa, in terms of hepatitis.

The presence of calculi in a gall bladder is incidental to the type, virulence and chronicity of infection and is of secondary

value in estimating the degree of disturbed function. The outstanding mechanical factor in the diseased gall bladder is its inability to distend without symptoms. In the normal individual the gall bladder distends during and after eating and does so by the influx of bile through the cystic duct. This distention is below the threshold of consciousness of the individual and so is without symptoms. When this insensible distention of the gall bladder is lost through inflammation we have a viscus relatively incapable of distention. The indigestion of gall bladder disease is characterized by a sensation of gas, distention, fullness or weight in the epigastrium or right upper quadrant. This fullness or distress is relieved by the belching of gas and entirely disappears upon voluntary vomiting and not an uncommon history is the story of the patient after a too hearty meal retiring to the toilet and inducing vomiting with complete amelioration of symptoms. This patient is neither fair, nor fat, nor forty. She is of any age, of any stature and the color of her hair varies. About 10 per cent of patients so afflicted have an additional symptom which is dramatic and sudden. This symptom is the development, like a stroke of lightning, of a terrific pain in the upper abdomen, paroxysmal or intermittent in character, associated with movement or restlessness upon the part of the patient, with some slight relief by bending over a chair, but which usually requires an anodyne in the form of a hypodermic of morphine to control but which does not completely relieve them. This paroxysm of pain, so-called "attack," shows a predilection for nocturnal occurrence, has a duration of four to six hours, disappears almost as rapidly as its onset, leaving behind a residual soreness along the right costal margin, and we have the story of a typical attack of biliary colic. A few cases go through life with one or two attacks and jaundice is not a feature in the symptomatology. About 10 per cent of the patients that have biliary colic have repeated attacks and in one of the attacks another outstanding symptom makes its appearance, namely, jaundice. Jaundice may be present after the first attack but usually there has been a sufficient number of previous attacks to indicate the possibility of jaundice in some future attack. The patient has a typical attack of pain, colicky in character, but at this time with fever, with or without chill, and the onset of a rapidly developing jaundice. Here we have a symptom group of pain, fever and jaundice and our gall bladder patient has passed into a third or progressive phase of pathology, namely, that of cholangitis, with or without calculi in the common duct.

In conclusion, the more we interpret our histories, clinical facts and associate this data with our knowledge of the normal physiology of the gastro-intestinal tract, the more we will make correct clinical interpretations.

A CONSIDERATION OF LUMPS IN THE BREAST *

By STANLEY PHILLIP REIMANN, M. D.
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ONE of the most difficult feats in medicine is to keep in mind a proper conception of what is normal,—true of any part of the body and especially true of certain organs which are, so to speak, more liable than others, and subject to more changes as a result of sex, age, occupation, physiological activity, etc. One of these organs is the breast. The breasts of no two women are alike, nor are the two breasts of any one woman alike. Differences are always discernible by sight and palpation. Furthermore, the breasts change from time to time, so that a standard of normal must be adopted with wide limits to take cognizance of normal changes. Before puberty, the male and female breasts are more or less alike in that they consist of ducts but no

* Read before the Ohio County Medical Society, May 27, 1927.

distinct lobules embedded in a mass of connective tissue; they are larger in the female child than in the male. At the age of puberty, the female breast undergoes growth but its normal size is subject to wide individual differences, as is its normal consistency. We must remember the factors which cause these variations, lest we be tempted to consider some of them pathological. In some individuals the breasts remain as simple as they were before puberty, the ducts increasing only in number and the stroma in amount. To the examining hand, the breasts of some virgins and women who have not borne children, feel more or less homogeneous; in others, there is felt that peculiar sensation described variously as corded, stranded, etc. Histologic examinations show that the breasts of virgins and women who have not borne children consist of ducts distributed as single openings or collected in groups with or without distinct periductal tissue, and with or without acini, *i.e.*, some show nothing but ducts, others ducts and a few structures like acini collected in abortive lobules, and still others distinct lobules. In other words, the breast may never develop true lobules if the woman does not become pregnant. But it is well known that the breasts frequently swell and become slightly tender at the time of menstruation, and in some women at occasional periods, a small amount of moisture secreted by ducts can be expressed from the nipples. These circumstances modify the tactile sensations obtained on palpation.

The stimulus to increase in size of the breasts at puberty, to their swelling and perhaps secretion at the menstrual period, is said to be a hormone, which is probably true, but since swelling, tenderness, etc., are not always uniformly distributed, in both, or even in one breast, it is quite possible that there is also a local factor concerned, whatever it may be. But the great stimulus is pregnancy and lactation, and to this I shall return later.

The stroma of the breast can be divided into three parts: (a) Connective tissue from the pectoral fascia divides the breast into a number of larger lobes. In these lobes is (b) another connective tissue dividing it into lobules, and finally, around each lobule is (c) a perilobular connective tissue. Fat is deposited in the interlobar connective tissue in amounts depending on the individual breast, but not necessarily correlated with the general adiposity of the individual, for some lean women have large, fat breasts, and some fat women have small, non-fatty breasts. The interlobular connective tissue extends between the lobules of the breast or between what might be called the potential lobules if the woman has not borne children. Fat is not deposited as a rule in this interlobular connective tissue until a later age, *i.e.*, about the menopause. Since the connective tissue is fibrillar and fairly dense, the relative amounts of fat and fibrillar tissue determine, to a large extent, the consistency of the entire organ. In addition, various changes are quite common in the connective tissue, particularly one called mucinoid which consists of softening of the collagen fibers, and this makes a difference in the breast. The perilobular connective tissue immediately surrounding the lobules or potential lobules varies widely in its development, but seems to be the last of the three to undergo the fatty or mucinoid change. It probably contributes little to the examining hand. It disappears when the breast undergoes the hypertrophy incident to pregnancy, and may or may not reappear when lactation is interrupted. To sum up, the normal breast exclusive of any physiological changes due to pregnancy varies in uniformity, size, shape, consistency and structure. It is at once obvious how important this is to the clinician and to the pathologist for with these facts in mind, many things considered pathological, and many queer and fanciful diagnoses will cease to exist. Such things as chronic interstitial mastitis, merely because the breast is hard and firm and on microscopic section shows dense, fibrillar tissue will have no meaning.

But the most important process which modifies the breast is pregnancy. The changes consisting essentially of growth and differentiation of lobules probably begin as soon as conception occurs and continue until full lactation is established. The acini which

secrete the milk develop as buds from the ducts, at first solid, later hollow; side buds and branches keep forming, enlarging and dilating until at the end of pregnancy and beginning lactation, the breast is composed of but little else than glandular tissue. Since the size of the breasts when lactation is established, is not equal to the sum of the new growth of glandular tissue and the old stroma and lobules, something must have disappeared; the stroma vanishes and makes room for the growing glandular tissue. Thus microscopic sections from such breasts show nothing but glandular tissue surrounded by a very small amount of supporting framework, hence the temptation to the inexperienced to call these structures adenomas. This process is, of course, reflected in the consistency of the breast and in certain other perfectly normal conditions such as one portion of the breast grows a little faster than others and produces an irregularity in consistency which may be mistaken for tumor formation. I need not dwell on such things as caked breast, abscesses, etc., which occur during lactation, because they are so familiar and require little discussion. But the involution when lactation is interrupted must engage our closest attention. We must keep in mind that it rarely progresses uniformly, and the rapidity with which lobules disappear varies in different women. According to McFarland, the rule is the earlier in life the pregnancy, the quicker the involution but with exceptions, and the general tendency is for the breast to return to a condition approximating that before pregnancy; complications such as recurring pregnancies, however, disturb the process. Further, according to McFarland, it is quite possible that a new crop of lobules is produced for each pregnancy; he has shown quite clearly that lactating acini are present alongside of old lobules in the breasts of women who have been pregnant several times. When lactation is interrupted, the empty, dilated acini collapses, their epithelial cells become smaller and undergo atrophy, while the stroma multiplies especially the periductal part. This compresses the lobules and they gradually shrink until a mere vestige remains. Further, according to McFarland, certain lobules or perhaps only a few acini of a lobule here and there continue to secrete longer than the others and thus remain dilated. Perhaps also the periductal tissue squeezes off a duct or two and does not allow the secretion to escape. The net result is that some acini remain more or less dilated. As is readily understood, this delay or change in involution may occur throughout the breast or in localized foci. The contents of the acini are very often clear and serous and so bespeak rather a transudate rather than a secretion. Furthermore, the amount of periductal tissue and other stroma varies considerably, also the kind and amount of fatty change and mucinoid degeneration previously mentioned. We have therefore to consider in the breast of a woman who has borne children: (1) the uniformity and completeness of the involution after lactation; (2) the number of pregnancies, and the degree of involution of the previous lobules before the next were developed; (3) th presence of dilated acini empty, or filled with fluid, and their distribution and size; (4) the amount of stroma regenerated during involution, and (5) the character and changes in that stroma.

Let us suppose that many lobules throughout a breast contain acini dilated and filled with fluid. If these are large enough to be palpated by the examining hand, the breast feels "shotty" and we give it the names "chronic cystic mastitis," "Schimmelbusch's disease," "cyst adenoma," etc. But the process is not neoplastic nor yet inflammatory, it is merely an involution affair. Further, according to McFarland and other observers, these cysts are so common that they are almost "normal" being present in a large precentage of breasts. When the process is uniformly distributed, it is apparent from the shotty feel, and the clinical diagnosis is, as a rule, not difficult. When, however, the condition is localized, the palpating hand feels a mass freely movable, usually not tender, except occasionally, especially during menstruation, confined to one small portion, fairly hard, and very confusing in its diagnosis from a tumor. But it is not a tumor and if we could know

the diagnosis before the specimen is removed, it is quite possible we would apply no surgical remedy, but unfortunately we cannot, always, differentiate clinically between this involution process and a real benign tumor or a malignant one. Consequently, it being a "lump in the breast," the patient applies for treatment and the part of wisdom is to remove the lump. The diagnosis can usually be made at the operating table with little or no difficulty. When the mass is exposed, if it is an involution process, it is, of course, a part of the breast hence it is not encapsulated, and to remove it, the tissue must be cut out with the knife or scissors. It is white and glistening and contains small cysts empty, or filled with clear, yellow fluid or perhaps fluid tinged red with blood coloring matter to the so-called "blue domed" cysts of Bloodgood. On incision, the fluid escapes and the cysts are lined with a perfectly smooth wall. There is none of the gristly hardness, none of the yellow pinpoint spots, none of the umbilication, none of the invasion, none of the infiltration, none of the scar-like retraction of a malignant tumor. A malignant tumor naturally is also not encapsulated and must be cut out. On the other hand, if the mass is a benign tumor, a real tumor, say a fibroadenoma, it is more or less sharply encapsulated since it is not a part of the normal breast and can be removed with a little incision and plain blunt dissection, with the handle of the scalpel. Furthermore, it is poorly vascular, distinctly lobulated, whitish yellow in color, uniform in consistency except for the lobulations, the centers of which, on section, bulge instead of retract, there are no pinpoint spots or fatty degeneration of cells, nor are there minute petechial hemorrhages. These points serve for differentiation in the vast majority of cases. When in doubt, the services of a good pathologist and his frozen section apparatus are, of course, essential, for it is quite well known that when a tumor is removed and proves malignant, secondary operation is attended by no particular success; it is also well known that just those cases which are doubtful yield the highest percentage of recovery when they are carcinomas.

In the universal involution process, opinions disagree. It is probable that unless definite symptoms of pain, annoyance and psychic disturbances, especially fear, are present, they need not be treated surgically, except, and this is a big exception, that a small carcinoma is much more difficult of detection in a breast containing many cysts.

The relation of these processes to carcinoma has much to do with the opinions as to treatment. If they are likely to become carcinoma, they are much more serious. It is quite clear from the literature, opinions, hypotheses, theories, etc., that these cysts have been much misinterpreted. As we have seen, it is neither tumor nor inflammation but quite likely a functional involution affair. At least in our opinion, this is the best explanation to date and the best name proposed is that advocated by McFarland, viz., "residual lactation acini." If we want another, possibly the least objectional is an old one suggested by Warren, "abnormal involution."

In the light of this and other reasons which are also cogent, structures interpreted by some as being active, are apparently decadent; there is no hyperplasia. If this is true, it follows quite obviously that carcinoma is unlikely to arise in them. The mere fact that many breasts containing carcinoma also contain residual lactation acini means little when we consider that residual lactation acini are present in so many breasts; a relation between carcinoma and residual lactation acini is probably fortuitous. At least, no one has as yet proved that these structures are the source of carcinoma and all statements to that effect are the result of enthusiasm or some other emotion rather than calm judgment.

But this does not negative the fact and I must repeat and emphasize this again, that the presence of these cysts makes the clinical detection of a small carcinoma much more difficult.

There are three sources of origin of carcinoma of the breast: the skin around the nipple, the ducts, and the acini. Paget's disease of the nipple and surroundings need not be discussed here. In most cases it is quite difficult and in many, impossible to

state whether a carcinoma arises from the ducts or from the acini, but there is one tumor which merits recognition and this arises from the ducts and on account of its special gross characteristics, has been called "comedo carcinoma" by Bloodgood. It consists of rather large cells, with pale, sometimes vacuolated cytoplasm, and vesicular nuclei arranged like collars around a space. They are not collers in reality nor is the space a pre-formed one, but the tumor grows in solid plugs or cylinders, the centers of which undergo degeneration and liquefaction; this produces the spaces around which the surviving cells are arranged. The space is filled with the debris of degenerated cells. Hence on gross section of the tumor, pressure exerted on its edges forces out small cylinders of debris somewhat like comedones. The tumor is thus quite easily recognized grossly and also microscopically. We shall return to it after discussing briefly the grading of malignancy. This has been attempted for many years, the idea being to give a hint as to the prognosis from the structure and type of cell present in the tumor. In a certain limited type, notably squamous epithelioma of the lip, the prognosis can be stated with a fair degree of success; Greenough has obtained interesting results in carcinoma of the breast. We ourselves are able to state that our patients who have comedo carcinomas have a much better chance of freedom from recurrence than others, irrespective, apparently, of the size of the tumor, its duration, etc., within reasonable limits. We attempt, therefore, to differentiate this type of tumor when possible.

Nevertheless a word as to one of the "accidents" may not be out of place since they render fruitless all of our efforts at malignancy grading. The entrance of tumor cells into the blood vessels, the formation of thrombi and the release of viable emboli may occur in any tumor even in those which, under ordinary circumstances, are the least malignant. Since such accidents are not always found unless many slides are examined, they may confound our best efforts at prognosis. But these considerations at least tend to keep our attention from being focused too strictly on the operative technique or x-ray treatment, etc.

An interesting symptom presented by some patients deserves especial mention. It is related to tumor formation, though no tumor can be palpated in many cases. It is "bleeding from the nipple." This is of course associated with carcinoma and a definite tumor in perhaps half of the cases, but in those in whom no tumor can be detected clinically, it is practically always associated with a growth from the walls of a duct of an epithelial or a connective tissue nature, in our cases, with a ratio of about ten of the former to one of the latter. A cauliflower-like papilliferous tumor grows from a duct, and fills a cyst-like space from the size of the head of a pin to a chestnut or larger. Those of connective tissue structure have been encountered by us as large as a small cantaloupe. The papillomas are delicate, branching stalks of a strand or two of connective tissue covered with tall cylindrical epithelium. The fibromas are merely connective tissue dendrites. Since they are very delicate, slight bleeding readily occurs from the tips of the stalks. When small, they have a consistency so near that of the breast, that they are not readily detected. When large, they are usually diagnosed as cysts. It is stated by some authors that the papillomas are benign and require no radical treatment, but it has been our experience that four of the last five have been not papillomas, but papillary carcinomas. Many authors emphasize this tendency to malignancy and perhaps it is wise at the present time to regard them with suspicion. A name formerly much used to describe the fibromas is "sarcoma phyllodes," but since these growths are usually not sarcomas, the better name is intracanalicular fibroma. That of the epithelial tumor might well be "intracanalicular papilloma" or "papillary carcinoma" as the case may be.

Among true sarcoma, our experience has been that the small round cell variety is most frequent.

We mention tuberculosis of the breast only to say that it may be confounded with carcinoma. The condition may be hemato-

genous, lymphogenous, or a direct extension from the neighborhood such as from caries of the rib, tuberculosis of the axillary lymph nodes, pleurae or lupus of the skin. In general, there are three forms, the ulcerative, the cold abscess and the nodular, and the appearance of the breast varies considerably and correspondingly. They may all resemble tumor at one time or another in their course. Diagnosis is usually not difficult with the specimen in hand, and of course the nature of the disease is revealed by the microscope. Parenthetically, a question of much interest is whether tubercle bacilli can be excreted in the milk of a tuberculous woman and whether sucklings can be infected by this means. I know of no proof of this proposition but it is generally believed that it is possible in animals. Further investigations along this line are needed.

A number of other conditions simulating tumor might be mentioned, such as actinomycosis which is practically always secondary and of which I have seen one case in a thirty-five-year-old woman. She had numerous lumps in the right breast as an extension of the process from the chest cavity.

To conclude this discourse then, I have attempted to expose the nature of some of the "lumps in the breast" and to rehearse some of the things necessary to their accurate diagnosis. But all in all, a "lump in the breast" is a suspicious character, and to borrow the expression, so often used by Dr. Deaver, "an empty house is better than a bad tenant."

THE OPEN REDUCTION OF FRACTURES *

By CARL W. SMITH, M. D.
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THE object of this paper is not to advocate the general open reduction of all simple fractures but to apply only in those cases in which satisfactory results cannot be obtained by non-operative procedures.

The opinion on this question is divided among different operators. For many years operative treatment of simple fractures of the patella has been practiced. After this followed reduction of the olecranon. Since the development of a more perfect technique by Lane the field has been enlarged to include every long bone of the body. The x-ray has helped in this advance.

The day is near at hand when all fractures of the femur will be subjected to the open method except in infancy and impaction.

The length of time to wait before operative procedures are instituted differs with the individual operator. We immobilize the member in a splint until the swelling has subsided, which is usually from seven to ten days after the injury. At this time the process of callous formation is most active and blood clots and loose shreds have begun to absorb; the soft tissues and the bone have developed a local immunity enabling them better to restrict infection.

There are three main groups by which internal fixation material may be classified. First—Absorbable as catgut and kangaroo tendon. Second—Non-absorbable, as bone plates, wire, nails, pegs and screws. Third—Autogenous bone grafts.

Catgut and kangaroo tendon can be used only where there is no great tension and strain on the point of fracture. Bone plates and wire are used in cases where there is great tension and a tendency for the fragments not to remain in position.

Open reduction of simple fractures should be undertaken only when the facilities for aseptic technique are present and the operator equipped with the proper skill and instruments. These can be found only in modern hospitals. Any attempt to perform such operations without these requirements

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will meet with infection and poor results. With proper technique and an experienced surgeon the danger of infection is no greater than in other major operations.

The general indications for open reduction of simple fractures are as follows:

1. When the fragments cannot be approximated.
2. When correct position cannot be maintained.
3. When there is an interposition of bone or soft parts between the fragments.
4. Spiral and oblique fractures.
5. Multiple and comminuted fractures.

In other words all cases of fractures should be subjected to the open method unless a good functional result can be obtained by the closed method.

Lane's instrumental technique is used by a great majority of orthopedic surgeons in this country. However, there are but few general surgeons doing a comparatively small number of bone operations, who have been able to master this technique.

The aseptic technique of bone surgery in the hands of a general surgeon should be very little different from that of any other surgery. It differs in, that handling bone with gloved hands, the gloves are likely to be punctured and infection may follow in this way more rapidly than in soft tissue. Surgeons should use common sense in these cases and handle the bones, especially the sharp points with instruments. The hand of the surgeon in a sterile glove will do less damage to the soft parts than heavy metallic instruments.

Our technique is as follows:

Before being taken to the operating room the site of operation is shaved and washed with soap and water and sterile dressings applied. The patient is then taken to the operating room and anesthetized, the parts are covered with a saturated solution of benzine and iodine. This is allowed to dry and a fifty per cent tincture of iodine applied. The patient is then draped and the iodine over the site of the incision is removed with alcohol. The incision is made long enough to get ample exposure of the fracture and the margins of the wounds are protected by towels fastened to the edge of the incision. The skin knife is then discarded, another being used for further dissection. The incision through the soft parts should follow the intermuscular septum. Sharp disssection should be used when possible and every precaution observed to avoid traumatism of the soft parts. The fracture is then exposed, and all clots and loose pieces of bone are removed. The ends of the bone are placed in position with instruments, using the gloved hand only when absolutely necessary. The type of splint to be used is now decided upon. We use cat gut and kangaroo tendon in cases where there is but little tension; wire and Lane's metal bone plates when there is severe strain. In using metallic bone plates it is best not to touch the plates or screws with the gloved hand. After the splint is applied the wound is closed with cat gut, using silk for the skin. In all cases where it is possible we immobilize the member with a plaster cast. A window is cut in the cast over the incision so it may be dressed and the skin sutures removed. All bone plates and non-absorbable sutures are removed within a period from 8 to 12 weeks, if there be good union on the fragments.

The treatment of compound fractures rests upon the individual case. There is danger of sepsis, hemorrage and many other complications. When injury is seen soon enough and in the absence of shock the patient should be anesthetized and a thorough disinfection instituted. The member should be shaved and washed with soap and water, benzine and iodine used to clean the wound and sorrounding skin. The entire wound should be mopped out with tincture of iodine. Preparation of the injury is about the same aseptic technique as in a clean operation. The wound is then washed out with alcohol and if much dirt is present, ether is used for further cleansing. All devitalized tissue, extravasated blood, tissue in which dirt has been ground, complete detached fragments of bone, and all foreign bodies should be removed by sharp dissection. If an internal splint is decided upon, only absorbable material should be used.

Hemorrhage is controlled in the usual manner and the soft parts repaired. The wound is closed without drainage if possible. The member is then immobilized, preferably with a plaster cast, a window being cut to provide for dressing of the wound. Primary closure of a compound fracture has been found to be safe under the following conditions:

1. The interval being under twelve hours.
2. When it has been possible to remove all foreign bodies and devitalized tissue.
3. When it is possible to close the wound without too great tension on the sutures.

The non-union of fractures is due to the following causes:

1. Infection.
2. Improper immobilization.
3. The presence of soft tissue between the fragments.
4. Wide separation or overlapping.
5. A poor blood supply.
6. Constitutional disease, such as syphilis, gout, rheumatism and rickets.

The treatment of non-union is absolute immobilization, with attention to any local and constitutional disease that may be present. Some surgeons advocate motion at the fractured point in the hope of stimulating callous formation, which to me, is of very doubtful value. If non-union is still present, after a reasonable length of time, open operation is indicated. The ends of the bone should be cut off so as to expose the medullary canal of both fragments and a bone graft done. An autogenous bone graft by the inlay method is done if possible. Sometimes it is necessary to use a medullary graft which does not give as good results as the inlay.

Summary of the main points to be observed in open operation upon bones are as follows:

1. An open reduction of a simple fracture is indicated when it is impossible to obtain a good functional result by the closed method.
2. The things to be observed after operation is decided upon are, the waiting period from seven to ten days, perfect aseptic technique, good, clean, sharp dissection, as little trauma to the soft parts as possible, post-operative immobilization and an early removal of non-absorbable splints.
3. In compound fractures, primary closure, if possible, in non-union, bone graft.

I wish to report at this time 22 cases of open reduction of simple fractures operated on by us during the last 18 months without any marked infection. All of the non-absorbable material used in these cases has been removed except two cases in which Lane plates were used and one wired clavicle. One plate case is to return in 30 days for removal. We have lost sight of the other two patients. These cases include the following:

5 Bone plates of the femur;
1 Martin bands on a badly splintered shaft;
7 Bone plates of the tibia;
3 Bone grafts of the tibia;
2 Wired clavicles;
1 Catgut suture of two metacarpal bones;
1 Kangaroo tendon suture of the ulna;
1 Kangaroo tendon suture of a radius which did not hold and a subsequent bone plate done.

There was no infection in any of these cases. One case of non-union developed in a tiba where a plate had been used. We obtained a four-plus Wassermann on this patient and specific treatment was used. Later a bone graft was done.

In closing I wish to say a few words in regard to the physician's safety, as well as that of the patient. We are coming more and more to consider every fracture which enters our hospital as a potential damage suit. We try to keep a complete record of all patients, x-ray pictures on admission to the hospital, after reduction, and at the time of discharge, are necessary for a complete record. What should be the general practitioner's attitude when he is called to treat a fracture? He should never treat a fracture without aid of an x-ray. He should strongly advise the patient before witnesses to have an x-ray made, both before and after reduction; then if the patient wishes to take the responsibility of not having this done, it is up to him. If we keep this in mind we will have fewer malpractice suits.

MALIGNANT GROWTHS OF THE EYEBALL *

By H. H. VEON, M. D.
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AMONG the malignant growths of the eyeball, the two most frequently encountered are Glioma, or Neuroepithelomia of the Retina, and Sarcoma of the Choroid, and they are the only ones I will undertake to discuss in this paper. Glioma or "Amaurotic Cat's Eye," as it is often called, is a disease of childhood, no true cases being found after the fifteenth year. Practically all cases develop before the fifth year. Cases are divided equally between males and females, but several members of the same family may develop this disease. Several instances of family Glioma have been reported. The cause is unknown. The tumor grows from the two granular layers of the Retina, but chiefly from the inner one. The mass is composed of small cells in a soft basement substance, and is never pigmented; and in its early stages grows only toward the vitreous, the retina remaining attached to the choroid. The first symptom noted is usually the peculiar pupillary reflex, which from its resemblance to a cat's eye shining in the dark, has given it the name, "Amaurotic Cat's Eye." This symptom is usually first noted by the parents, who find upon examination that the child is blind in that eye. Upon examination with the opthalmascope, we find in the fundus a whitish, yellowish, or reddish-yellow mass. Its surface may be either smooth or nodulated, and is covered with a network of vessels. In this stage the tumor grows slowly, and months may elapse before it fills the globe. During this stage there is no pain and the child's general health is not affected; the only symptoms being the peculiar reflex and loss of vision. The tumor finally fills the globe and enmeshes all its tissue. The tension is increased, the episclereal vessels are dilated, the cornea takes on the appearance of an interstetial keratitis. The child becomes fretful, emaciated and cachectic. The tumor finally breaks through the globe, either in front at the corneosclereal junction, or behind at the optic nerve entrance. Once out of the globe the tumor grows very rapidly, and soon becomes a large ulcerated bleeding mass. Metastases takes place and may develop in any part of the body. Twenty-five per cent of these cases develop the disease in the second eye, regardless of the time the first eye is enucleated. The prognosis is always serious; even the cases with early enucleation only show a percentage of 13 per cent of recoveries. Cases which have penetrated the eyeball are all fatal. The only treatment is early enucleation.

Sarcoma of the choroid in its early stages presents a picture very similar to that of glioma. There is a detachment of the retina at the site of the tumor, which is either purple-red or slate colored, with vessels running over it. There is no pain and the tension at this time is normal. Vision may be only slightly reduced. The duration of the first stage is usually from one to two years. In the second stage the tension increases, the anterior chamber is shallow, the episclereal vessels are dilated, the cornea is cloudy and the pupil dilated, presenting a picture very much like absolute glaucoma. In the third stage the eyeball ruptures and presents a dark colored bleeding mass after which metastatic nodules may form in different parts of the body. This last stage usually lasts but a few months, the patient dying of exhaustion. The chief thing of interest in these cases to the oculist, is diagnosis. While the appearance of the glioma and the sarcoma of the choroid may be very much the same, we are not likely to make a mistake if we remember that glioma always occurs in childhood and that sarcoma of the choroid is rare before the fifteenth year. They most often occur between the ages of forty and sixty years but may be seen later. A more difficult thing

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is to distinguish a sarcoma of the choroid in its second stage from that of an absolute glaucoma. Usually in an absolute glaucoma, the other eye will give us some hint as to the true condition.

As in glioma the only treatment for sarcoma of the choroid, is early enucleation and if the case is not seen until the second stage of the disease has passed, the entire orbital contents must be removed.

FEVER — ITS PRODUCTION AND REGULATION *

By LEONARD J. BERNSTEIN, M. D.
Wellsburg, W. Va.

THE subject of this paper has been a perplexing one to me always. If you think back over your years of medical study you will probably recall that the entire subject of body temperature was always taken for granted. During our course in physiology we read something of a heat-regulating nerve apparatus with a heat-regulating center variously located any place between the anterior horns of the spinal cord and the optic thalamus, and regulating, augmenting and inhibitory centers located elsewhere in the brain. This was all rather nebulous and always just beyond the grasp. What did remain fixed was the fact that under physiologic conditions, the human body maintained a fairly fixed temperature of very close to 98.6 degrees Fahrenheit.

Then as we were introduced into the mysteries of pathology, we learned very early of a body temperature varying to a greater or lesser degree from the normal. Fever became an early and definite fixture, and we became rather proficient in recognizing the various types, and relating them to certain diseases. We came to associate an afternoon rise of temperature with one disease particularly; a type of fever that graphically resembled an ascending stairway platform, and a descending flight, all divided into three fairly equal periods, we associated with another disease; and a sudden rise, a sustained elevation over several days, and a sudden fall, with still another ailment. Our professors taught us that an appendicitis with a stationary or descending fever was safe to wait, whereas an ascending fever indicated immediate operation. "Watch the temperature" was the word; and we soon learned to follow the sick body over the fever chart like a storm-tossed vessel upon the sea, always hoping for its return to the safe sea lane of 98.6 degrees.

But as we went on we began to recognize that fever had its vagaries. Sooner or later after we had assumed our full share of responsibility in the treatment of human ills we learned that fever was not so simple a guide. We have all seen very sick patients with rather low temperatures, and patients not so sick with a fever very high. Until after many such repeated experiences, we have come to speak knowingly of fever—apologizing, so to speak, for its irregularities. So that we are no longer surprised, for example, to see an appendiceal abscess with practically no fever, and again, a temperature of 104 degrees with an appendix that is only slightly affected. And the word now is: "You can't always go by the temperature." And so we still go on taking temperatures and tracing curves and following the endangered vessel over the broken course feeling that we must try to help it back on the right lane of 98.6 degrees, but entertaining a measure of doubt as to the infallibility of the thermic sextant.

Far be it from me to detract from the value of fever as a clinical sign. That, of course, is not the object of this attempt. And as a symptom it is second only to pain. Were it not for fever a great many of our patients would never consult us. For man has learned from time immemorial that

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* Read before the West Virginia State Medical Association, White Sulphur Springs, June 22, 1927.

fever is incompatible with health. But this is the point I wish to establish: I have known the fact of body temperature so long, that I have come to take it for granted the same as the other fundamental processes of the human mechanism. But while I was drilled in and taught to think of, and investigate the other fundamental processes of life, such as metabolism, respiration and circulation—their physiologic state and their variations from the normal—the process of maintenance of body temperature and its variation from the normal has been allowed to go unchallenged. While the other processes were looked upon as theorems to be proved, this process was accepted as an axiom. Herein lies the exposition, if you will, of an unsatisfactory state. The subject is perplexing because, of course, it is not axiomatic at all, but rather clamoring for an explanation. Granting the heat-regulating nerve apparatus with a heat-producing center and other regulating, augmenting and inhibitory centers, what is it that acts on these centers and how? Why will one toxemia produce a fever and another will not? Why will certain infections produce higher fevers than others? What takes place when a fever fails by crisis and why?

These, and a score of other questions present themselves for explanation whenever one thinks seriously on the subject of fever, its production and regulation. With a view of clarifying this question I set out to review some of the literature on the subject.

Broadly speaking, body temperature is the resultant of heat production and heat dissipation. It is clear that all body heat is generated during the metabolic changes that go on in the body. A small amount of heat is derived from grandular activity, but the greatest source is in the muscular activity. Here heat is derived in part from catabolic changes going on to maintain cell life, but mainly from oxidation occurring during active motion of the body musculature. In experiments carried out by DuBois and his co-workers with men who had been treated with intravenous injections of foreign protein and typhoid vaccine for various arthritic conditions, it was shown definitely that with the onset of a chill following injection, heat production increased from 75 to 210 per cent due mainly to muscular movements in shivering. This increase, as well as the other phenomena of heat storage and subsequent heat dissipation, followed closely the findings during a malarial chill.

When it comes to heat production in disease it would seem manifest one must account for it in the same way as in health: namely, that the production or over-production of heat is due to an increased oxidation. In his most illuminating paper on the general subject of "Infection and Immunity" Vaughn states that all bacteria are capable of producing fever, and points out that fever does not occur during the period of incubation when the organisms are present and multiply in the body, but after the body has become sensitized to the organism and begins to destroy and digest it. Therefore, he concludes that "fever of infection results from the parenteral digestion of the bacterial products." He further states that by the subcutaneous injection of egg-white into rabbits all forms of fever and the accompanying clinical symptoms of it may be produced at will by varying the quantity and time of injection, and again concludes that "protein fever, which includes all infective and practically all clinical fevers, results from parenteral digestion. In this process, the animal's cells supply the ferment and the foreign protein constitutes the substrate."

In line with this thought Marienesco states that "the instrument with which the organism varies its temperature in the normal and in the pathological state, consists of the oxidizing ferments. The nervous system plays only the role of co-ordinating agent in the vascular reactions which intervene in the distribution of the oxidasophores which proliferate under the influence of an exciting agent."

Likewise, heat dissipation in itself is clear. Heat is lost through radiation, conduction, surface evaporation, and by furnishing of mechanical energy. Also, there is a loss of heat during respiration, through the excreta, and through the ingestion of cold food and drink. In health, disturbance of one or more

of these modes of heat elimination is compensated for by the remaining agencies.

But when we have stated these facts the question of ultimate government and regulation of heat production and heat dissipation remains. Most writers on the subject ascribe heat regulation to the central nervous system. As early as 1837, B. C. Brodie called attention to this regulation. Since then there has collected a great literature and many investigations of the problem have been carried on. A heat regulating center has been located by one investigator and another in various portions of the brain. The fact that it has been variously located would tend to throw doubt on any definitely circumscribed portion of the brain as the center. In fact, as late as 1924, summarizing his work before the American Neurologic Association, Karl Kornblum said: "From the review of the literature, as well as the conclusions drawn from my own experimental work, I feel that the use of the term heat or temperature center as indicating a definite spot in the brain whose sole function is the regulation of temperature, is misleading, and the term should therefore be dropped from physiologic and clinical considerations of temperature regulation. Unquestionably there are in the brain widely distributed reflex arcs that are essential to the maintenance of body temperature. These arcs find their chief pathways in the basal ganglia and brain stem, and are intricately associated with other vital functions of the body, namely, circulatory, vasomotor and respiratory. It is through the derangement of these pathways that temperature disturbances are brought about."

Nevertheless, most authors assume a thermo-regulator center and ascribe fever to a disturbance of the same. It would be well, then, at this point to summarize some of the theories of fever.

Broadly, we have the centralization and the decentralization assumptions. In other words, the two main groupings of theories, one depending on a nervous mechanism for control, and the other denying it. Among adherents to the former theory there are those who ascribe fever mainly to a disturbance of the thermo-regulator function of the brain. Haliburton, for example, holds that the main cause of high temperature in fever is neither a hyper-thermogenesis nor a diminished dissipation of heat, but an interference with the reflex mechanism which in health equalizes the two. Others ascribe it to a conservation of heat, or a failure on the part of heat elimination to keep up with heat production.

In discussing his findings in the experiments above mentioned under the topic of "Relation of Heat Production to Heat Elimination" DuBois says: "In malaria it was found that during a chill the heat production was enormously increased while the heat elimination remained at practically its basal level. After injection of foreign protein, the same mechanism is observed. It would seem as if the temperature regulation were set at a higher level and that the body responded by producing heat sufficient to warm the tissues to the new temperature level. After vaccine, the heat production is increased from 75 to 210 per cent during the chill, while the amount of heat elimination is scarcely increased above its former basal level. This, of course, results in the storage of large amounts of heat within the body. After the chill is over, the heat production drops sharply but still remains somewhat above the normal, as is usually the case during increased body temperature. The rectal temperature still continues to rise after the shivering ceases. The heat elimination is practically unchanged. During the stage of high continuous temperature the heat elimination increases until it is equal to the heat production; that, however, being at a level from 20 to 40 per cent above the normal. During the fall in body temperature, the heat production drops gradually to the basal level and the heat elimination increases steadily."

Blanton summarized these findings rather aptly when he says: "When all factors are considered, heat storage seems to be the essential element in pyrexia. In other words, the thermo-regulator has been turned up a notch or two. This is effected chiefly through conservation of heat. It is remarkable how little additional heat is produced

in pyrexia, (20 per cent), as compared to that formed during eating or exercise, (300 per cent").

There is no doubt that the effect of toxins on the body is an increase in body temperature. In seeking an answer to the question of the ultimate mechanism of fever Barbour attempts to explain it on the basis of a disturbance of the water balance of the body, or a blood concentration. "Accepting," he says, "the water balance as the central factor in fever, we are nevertheless obliged to correlate its behavior with that of the nervous heat-regulating mechanism.

"In the infectious fevers some such process as the following probably takes place. As the provocative poison reaches the tissues (perhaps the muscles in particular) catabolic changes are initiated which increase the affinity of the tissues for water. This general demand upon the blood for water tends to reduce the blood volume, especially at the expense of the surface blood. The skin immediately becomes cooler, and this arouses the nervous regulation against cold, thus exaggerating the processes of vasoconstriction and hemo-concentration. This continues until the blood becomes warm enough for the nervous centers to interpret the temperature as comfortable or neutral."

McLeod likewise bases his theory of fever on the concentration of the blood due to the action of the toxins on the body tissues. He further states that during the stage of fever there is an increased heat production and a diminished heat dissipation, both phenomena due to an exaggeration of the nervous mechanism which in the normal individual maintains the heat level. That there is an increase in heat production has been shown by the respiration calorimeter. Likewise can it be shown that there is deficiency in the heat elimination. It has been pointed out by McLeod that "when the temperature of a normal individual is raised, say 1 degree C. there is always an increase in the cutaneous circulation accompanied by marked sweating. The same is true during exercise. However, in the individual with a fever of the same degree, there is no increase in cutaneous blood flow, in fact, the reverse is true and there is no unusual perspiration. Obviously the heat dissipating mechanism has been set up to a higher level interpreting a higher body temperature as the normal.

That this altered temperature balance in fever is under the definite control of a nervous mechanism would seem obvious. Else, what would prevent the temperature from constantly rising or falling? Not only that, but above the altered temperature level assumed in fever, the individual is subject to the same influences and responds in a similar manner as in the normal. Thus, a patient with fever will sweat when subjected to a hot bath which will raise his temperature about .2 to .5 degrees C. and will shiver when exposed to cold. His explanation of the mechanism of fever is precisely that of Barbour.

He further supplements this explanation by stating that the toxins may have a direct action on the thermic centers, thus deranging their normal regulating control.

According to all these authors, then, the nervous system is definitely involved in the mechanism of fever. Indeed, one might say with Barbour that "Without the brain there is apparently no infectious fever."

In contraposition to these theories based on the thermo-regulator center there are the following: Shali states that the assumption of a thermo-regulator center is unnecessary, and further, that the existence of one has not been proved. First he believes that body temperature is a resultant of heat production and heat dissipation which may be influenced by any of the organs but mainly by changes in the blood distribution. This supposition of a decentralization explains "why so many different conditions result in an increase of body heat—and also why factors working in opposition to these conditions may produce a sub-normal temperature."

According to Sahli the mechanism of fever is briefly this: Some toxin or toxins injure the internal organs producing a local hyperæmia. This increase in the internal blood supply reduces the circulation in the skin and there is a consequent diminution of heat elimination with an accompanying heat stasis. This latter is the essential factor to fever. Increased heat production according

to him is not essential although it may be present. This basis of circulatory disturbance of fever explains in the author's mind, why cooling of the surface may not reduce the internal temperature of a patient with fever, ascribing it to an inefficient circulation in the skin with inadequate heat dissipation. He also explains the fact why some patients with a definite toxemia, as evidenced by the clinical symptoms, do not show any elevation of temperature. It is simply due to a diminished heat production, which offsets the decreased heat dissipation.

Woodyatt, on the other hand, was able to produce high temperatures in dogs by dehydration with intravenous injections of concentrated dextrose solution. This he attributed to a concentration of the blood and a consequent lack of water in the body for heat elimination. He advances, therefore, that a disturbance of the water balance is the main factor in the production of fever, and rejects the neurogenic theory.

According to Woodyatt the toxins increase the absorption of water by the colloids of the body, producing a deficiency of free water for heat dissipation. With the overcoming of the toxins water is released and there is an increased elimination of heat with a return to the normal.

Here, then, are several attempts at a definite explanation of the mechanism of fever. In the light of these theories one may explain—by means of one or the other of them —most of the questions until now obscure.

Whether or not a nervous regulating center be accepted, all agree that it is a toxic substance which is the exciting factor. The degree of toxicity may perhaps explain the difference in the degree of fever and the time of defervescence in some cases. It is clear, however, that no one theory here reviewed will explain the behavior of fever in every condition. So that it would seem that some questions which present themselves on the subject are still pressing for an answer.

OUR DUTY TO DIABETIC PATIENTS*

By S. L. CHERRY, M.D., F.A.C.P.
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IF the estimate of Joslin is correct, that there are a million diabetics in the United States, the medical profession has before it a field which it has scarcely touched. Thanks to the work of Allen, Joslin, Banting and others, the treatment of diabetics has advanced to a point where, except for being on a more or less restricted diet, the diabetic can do the same work and assume the same risks as his normal brother. Unfortunately this knowledge is slow in seeping down to the rank and file of the profession, and most patients still have a horror of the word "diet." Many patients are still being told to eliminate bread and potatoes from their diet and to eat graham or gluten bread instead, or are allowed liberal diets and given varying doses of insulin to partly control the glycosuria. It is the purpose of this paper to point out some of our duties in the diagnosis and treatment of diabetes.

The first step in the diagnosis of diabetes is to make it a rule to do a routine urinalysis for every patient. This may seem radical, but when it is recalled that many cases of diabetes do not show polyuria or excessive thirst, the necessity becomes evident. Each day of delay in the diagnosis may mean so much more lowering of carbohydrate tolerance and possible complications. A word may here be said of those cases, which, on routine examination, show a trace of sugar in the urine. Are these cases to be considered diabetic? As treatment in these cases is not urgent, a definite routine should be followed before they are classed as normal or diabetic.

First, the patient should be asked to return for examination from one to two hours after a hearty meal. If he is diabetic his

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glycosuria will surely have increased. If there is still only a trace of sugar present in the urine there may be something wrong with the method of testing used, the solutions may be at fault, or the patient may be a case of renal glycosuria. The determination of the blood sugar curve, after a glucose meal will clear up any doubtful case. For practical purposes it is enough to know that persistent glycosuria increased by an extra allowance of diet is sufficient for a diagnosis of diabetes.

Having established a diagnosis of diabetes, there should be no undue delay in the commencement of treatment. The basis of all treatment is the determination of the patient's tolerance. Its purpose is to find out how much carbonhydrate we can feed this particular patient without producing hyperglycemia or glycosuria. This determination must be made accurately and can usually be done only in a hospital with careful laboratory checking. In brief, the method is to feed an estimated amount of protein, fat and carbonhydrate and save the urine passed over a period of twenty-four hours. The total glucose intake is calculated from the diet; the glucose excretion is determined from the twenty-four-hour specimen. The difference between the glucose intake and the glucose output is the amount utilized or burned by the patient, in other words, his tolerance. In practice the test diet is calculated as follows: one gram of protein is allowed for each kilogram of body weight; about fifty grams of carbonhydrate are given and enough fat added to bring the total calories to twenty or twenty-five calories per kilogram of body weight. A man weighing 60 kilograms (132 pounds) would thus receive protein 60 grams, fat 118 grams and carbonhydrate 50 grams.

If after such a diet no sugar appears in the urine carbohydrate and fat are gradually added until the blood sugar shows an increased level or until glycosuria appears, when the carbohydrate is reduced to a point fairly below the amount which has led to glycosuria. The fats are now adjusted until the patient is receiving about 25 to 30 calories from the entire diet per kilogram of body weight. Patients who have a carbohydrate tolerance of 60 grams or more do not need the aid of insulin to obtain sufficient calories for ordinary light work. When the work is laborious a small dose of insulin, say 15 units, given before breakfast, will enable the patient to utilize 30 grams more carbohydrate and about 45 grams additional fat—a total addition to the daily diet of 525 calories.

When, after such a test diet, the 24-hour urine shows considerable sugar, the diet may be still further reduced first in the fat and then in the carbohydrate until the patient is sugar free. But it is much better to use insulin to clear up the glycosuria while allowing the patient to remain on the test diet. Thus if 30 grams of glucose are being excreted daily, it is safe to give at least 15 units of insulin to take care of this. In some cases a smaller dose will suffice but in many cases much more insulin is necessary than the calculated dose based on one unit of insulin for every two grams of glucose. Once the urine is sugar free, diet is increased by the addition of carbohydrate and fat, and the dose of insulin is increased proportionately until the patient is receiving sufficient calories. By this means we can shorten his stay in the hospital and avoid the loss of weight incident to treatment by semi-starvation.

Patients who have lost considerable weight or who have acidosis of any marked grade should be put to bed and given insulin at once along with a test diet. As such cases are usually severe diabetics and have a marked hyperclycemia and glycosuria, it will generally be safe to give enough insulin to take care of all the carbohydrate in the diet, namely 25 units daily, but in many cases the blood sugar is so high that one feels safe in giving two or more times this dose of insulin until the urine becomes sugar free. It is very gratifying to see an emaciated diabetic become sugar free in a day or two and begin to put on weight, or to see a patient with marked acidosis, nausea and abdominal pain become sugar free and comfortable.

Our duties have only begun when we have rendered a patient sugar free. In addition we must give him: 1. A clear conception of his condition. 2. Convincing reasons for ad-

hering to his diet. 3. Specific and clear directions for varying his diet so that it will not become monotonous. 4. Definite instructions in the method of testing his own urine and for administering insulin to himself. 5. Information regarding certain complications and accidents to which a diabetic is unusually susceptible, and lastly we must show him that what he knows about diabetes holds good only to a certain point so that he must ever keep in touch with his physician whose knowledge is not limited to one case.

To get a clear conception of diabetes it is necessary to remember that it is a disease in which there is an inability to utilize above a certain amount of glucose. That portion eaten and not utilized by the body is excreted in the urine. The harm does not stop there. Continued intake of more glucose than can be utilized breaks down the tolerance still further and glycosuria increases. This, in turn, leads to an inability to oxidize fats completely with resulting acidosis and possible coma. A diabetic who stays strictly within his tolerance can look forward to a gradual increase in tolerance.

The diabetic diet need not be monotonous. Only laziness or ignorance can make it so. A diabetic can eat practically anything that a normal person can eat except that the amounts eaten are restricted according to his degree of tolerance for carbohydrate. The allowance of small amounts of bread with test diets often helps to convince diabetics on this point, and those patients who take insulin know the sensation of eating small amounts of sugar or candy when they have reactions. The lesson, then, to drive home to diabetics, is—IT IS NOT WHAT THEY CAN EAT, BUT HOW MUCH. To accomplish this it is necessary that a diabetic be taught the caloric requirements of the body as regards all classes of foods. He must be taught how to go over a food table showing the percentage analyses of foods and to select from it enough foods in proper amounts to make up the total calories of the diet prescribed for him. A well trained patient needs only a prescription for so much protein, so much fat and so much carbohydrate; the individual foods with their proper amounts he can find for himself. A proper diabetic diet can thus be kept well balanced, be made attractive, contain all the necessary vitamines and roughage and will keep the patient at proper weight and body strength. Patients can be taught easily to test their own urine and give their own insulin. It is remarkable how soon they become adepts in both these procedures.

Above all we must guard the patient against accidents and complications. A patient with well controlled diabetes may get a tooth pulled and suffer a 50 per cent drop in tolerance. A diabetic may be able to perform severe manual labor in an industrial plant but a severe accident may cause him to lose his tolerance or even send him into diabetic coma. It is well known that infections are often accompanied by a loss in tolerance. No diabetic should be operated on or given anesthetic until he has been carefully prepared. After operation he should again be put under the care of his physician so that drops in tolerance or acidosis may be avoided, or, if present, corrected.

Diabetes in children is treated along exactly the same lines as in adults, with the exception that children need proportionately more food per kilogram of body weight. In nurslings insulin can be given in gradually increasing doses until the dose given will take care of the sugar which formerly was being excreted. In older children the diet closely approximates that of the adult. Milk can be reduced in amount, and meat, vegetables, etc., can be fed to children at surprisingly early ages without any apparent harm. Children approach coma rapidly and as rapidly recover by the aid of insulin. One may see a child in coma today and several days later see him up and about eating an abundant diet. The old idea of granting a diabetic child an average of two more years of life must now be abandoned, and we have many reasons for believing that with proper care such children will grow up and become self-supporting and approximately normal members of society.

SUMMARY.

It is our duty:

1. To make routine urinalyses on all pa-

tients in order to diagnose diabetes at an early stage.

2. To learn how to treat our cases along the lines laid down by Allen, Joslin, and Banting, and others.

3. To teach the patient how to select the various articles of his diet from food tables in order to get an attractive and well balanced diet coming within his tolerance.

4. To instruct the patient how to test his own urine and administer his own insulin.

5. To teach him to remain under the supervision of his physician in order to avoid various complications to which the diabetic is peculiarly susceptible.

The Kahn Reaction

By CHAS. E. GABEL, M. D.
Director, W. Va. State Hygienic Laboratory

The Kahn* having become the standard method for the serum diagnosis of syphilis in the State Hygienic Laboratory, it seemed timely to briefly discuss the nature of the test, its value to the clinician and its clinical interpretation.

The Nature of the Kahn Test. The Kahn test is based on the principle of precipitation. Only two basic reagents are required; an antigen which does not deteriorate and the patient's blood. As is well known the Wassermann test requires five reagents, three of which must be fresh animal ingredients. These deteriorate rapidly and often vitiate the results of the test. Thus we have replaced a lengthy and indirect method by one which is short and direct.

The Value of the Kahn Test to the Clinician. 1. Comparatively free from sources of error. 2. More specific in detecting syphilis. Not influenced by other pathological conditions (except yaws). 3. More rapid, enabling early reports to be sent. 4. Use in emergency cases. 5. More sensitive in detecting early primary cases.

Clinical Interpretation. The clinical interpretation is exactly the same as in the case of the Wassermann test. A negative reaction does not eliminate the possibility of infection. A four-plus or three-plus reaction should be taken as a symptom of syphilis to be considered in connection with a history of infection or with clinical symptoms of this disease. Weaker reactions should also be correlated with clinical evidence or history of the disease.

*Kahn, R. L.: Serum Diagnosis of Syphilis by Precipitation.

Anaphylactic Phenomena

By S. A. WAHL, M. D.
Cleveland.

To the Editor:

I have noted several queries in The Journal as to the toxicity, if any, from the active immunization against diphtheria by periodic injections of toxin-antitoxin mixture. I have immunized a few thousand children during the last four years, without any definite reaction till recently.

A 10-months-old baby had received two injections of the toxin-antitoxin mixture at two-week intervals, without any reaction other than the usual local redness at the site of the injection. About ten minutes after the third injection, which was 28 days and 14 days, respectively, after the first and second injections, the child developed hyperpnea lasting a few seconds, then dyspnea for only a very few seconds; it became moderately cyanotic for perhaps 30 seconds, and, finally, two or three minutes later, giant urticaria appeared on the face and neck, and spread rapidly over the chest, abdomen and lower extremities.

However, on the administration of epinephrine hydrochloride, 7 minims (0.4cc.), intramuscularly, the symptoms cleared up promptly. The child was under hospitalization for a few days, during which time there wa sno recurrence of the anaphylactoid phenomena.

This isolated report of a baby developing mild anaphylactic symptoms following the reinjection of such a small amount of horse serum (1/3000 cc.) brings to our attention the need for having epinephrine at hand in case of emergency. Of course, the fourth injection was omitted in this case.

A.M.A., April 16, 1927.

CASE · REPORTS

Death From Tetanus

By MILTON C. BORMAN, M.S., M.D.
Montgomery, W. Va.

Death from a disease which is now considered preventable may yield valuable information both to the laity and medical profession. The following case is therefore reported:

M. E. B., white housewife, aged forty years, eight days prior to admission to the hospital, ran a rusty nail into her left foot. On the seventh day after the injury, she noticed some stiffness in her jaws. She consulted her family physician, who gave her 5,000 units of tetanus antitoxin, and sent her to the hospital. On admission, there was marked stiffness of the neck with retraction of the head. The back was quite stiff, in an orthotonic position. She was perspiring freely. Her cardiac rate was 120, and she was anxious and restless. Her jaw was firmly set, but it was possible to force three tongue depressors superimposed upon each other between her upper and lower teeth. There was rigidity of the abdominal muscles. The deep reflexes appeared normal. There were no ankle clonus, Gordon, Oppenheim, Chaddock, Kernig, Trousseau or Chvosteck signs. Patient gradually became worse. The trismus became more marked. There was inability to breath during the clonic contractures which gradually appeared. Risus sardonicus became evident. The pulse rate rose to 160. Urinary and rectal incontinence developed. The slightest noise or appearance of light was sufficient to initiate a generalized clonic convulsion.

On admission, patient was given 40,000 units of anti-tetanic serum intravenously. The innocent appearing old puncture wound in the soft tissues over the left first tarsometatarsal joint was incised, and a small amount of brownish stained pyoid material obtained. Patient was given antitoxin intravenously each morning and intramuscularly each evening. No serum was given intrathecally. A total of 190,000 units of anti-tetanic serum were administered. Choral hydrate, bromides, and morphine sulphate were used to quiet the patient. Fluids were well taken despite considerable dysphagia, and hypodermoclysis was used to keep up a high intake. Patient died suddenly after a convulsion on the fourth day after admission.

On post-mortem examination, the myocardium showed fatty infiltration, the spleen and kidneys showed considerable acute congestion. The liver showed mild fatty metamorphosis only visible microscopically. No examination of the central nervous system was made.

DISCUSSION

The laity is not universally awake to the dangers and omnipresence of tetanus, nor does it understand the early signs and symptoms of the disease. Continued education of the public concerning the dangers of tetanus will reduce the incidence and mortality of the disease, and this education should be carried out.

In this advanced case of tetanus 190,000 units of anti-tetanic serum were administered intravenously and intramuscularly. No evidence of serum sickness or of any reaction was noted, although only four days elapsed from the time of its first administration until the death of the patient. This dosage is high. It was believed that by giving the serum intravenously an immediate general diffusion of the anti-toxin was obtained, while the serum given intramuscularly was a reserve gradually drawn upon for the neutralization of toxins.

On admission, the wound produced by the nail was barely visible and appeared innocent. Incision, however, evacuated a small amount of brownish pyoid material, and em-

phasizes the importance of such a local procedure even at a date several days removed from its occurence. Unfortunately, no smear was made of this material, and no innoculation into animals to prove its identity.

It is quite possible that the patient might have been saved had immediate and subsequent intrathecal serum administration been used after hospitalization. This question is still unsettled, and there is no universal agreement. Many workers believe that the intramuscular and intravenous medication is the proper procedure. Anesthesia could have been used to control the convulsions during intrathecal administration if it had been considered advisable. The weakness of the patient, her dysphagia, dyspnea, and tachycardia were the only contraindications. Jordan [1] states that "an intravenous injection of 30,000 units maintains antitoxin in the tissues for thirty-nine days. In the majority of cases this single injection is absolutely sufficient." We believed that little or no harm could result from large and frequent doses of antitoxin. We therefore chose to err on the side of excess dosage. The curative value of tetanus antitoxin is doubtful as is shown in the above reported case. It is a mistake to wait for the development of the signs and symptoms of tetanus.

SUMMARY

A case of tetanus which resulted fatally after 190,000 units of anti-tetanic serum were given by intravenous and intramuscular routes is reported. The advisability of early and sufficient antitoxin medication is discussed. Attention is called to the necessity of further education of the laity as to the value of prophylactic anti-tetanic serum and its questionable therapeutic value.

1. General Bacteriology. Jordan. 7th Ed. p. 384.

Nose Bleeding

By J. R. VERMILLION, M. D.
Princeton, W. Va.

Patient referred to the hospital by Dr. Carr of Narrows, Va., on March 6th. He was admitted at 9:30 p. m. He gave a history of nose bleeding which had been giving him trouble for a period of five days. He had been given the usual ambulatory treatment for nose bleed, one dose of horse serum.

His family history was negative. His past history: Patient had been given antisyphilitic treatment about three years ago for syphilitic condition of the throat, with a positive Wassermann. His present condition being the first time he had ever experienced any abnormal amount of bleeding from any part of the body. He gave no history of hemophiliac tendency.

His present condition started without apparent cause and has been more or less continuous ever since.

Physical examination showed a well developed and nourished male adult with the appearance of having gone through a very severe hemorrhage. Physical examination was otherwise negative, with the exception of a very severe bleeding on the right side of the nose. Blood was coming from both the anterior and posterior nares. The bleeding was so profuse that it was impossible to find the bleeding point. The nose was sprayed with a cocaine solution, and ice cap put on his forehead which seemed to control the hemorrhage to some extent. The patient continued to bleed at intervals throughout the night. The next morning his nose was packed on the right side anteriorally, which had no effect on the bleeding. Then the entire nasal cavity on the right side was packed from behind with strips of gauze. As soon as the right side was packed, the left side started to bleed. This was packed in a similar manner. Hemostatic serum five cc's was given in the muscles every six hours with cleoro calcium by mouth. Nose continued to bleed at intervals with the packing present, and on the third and fourth day intermuscular injections, thirty cc's, of a thirty per cent solution of sodium citrate was given intramuscularly without any apparent effect. During this time the nasal packs had been changed several times.

On the fifth day both packs were removed without hemorrhage and no bleeding was present for thirty-six hours, at which time two-tenths of gram of neo-salvarsan was

given. One hour after this the bleeding started again and continued at intervals even though the nares were packed. Fifty cc's of whole blood was given intramuscularly without improvement. The blood transfusions were done by the citrate method, 500 ccs given. This improved the patient's general condition but had no effect upon the bleeding.

At this time the case had assumed so serious an aspect that Dr. St. Clair of Bluefield was called in consultation. The packs were removed and no bleeding was present. Dr. St. Clair did not think it advisable to use instruments to examine the nose for fear of starting up bleeding. Bleeding started again in about two hours. This continued off and on for several days, during which time the patient had had several transfusions. It was finally decided to remove the packs and make examination of the nasal cavity, even though it started a very severe hemorrhage. This was done and he was found to have an extensive ulcer perforating the nasal septum The ulcer was cauterized around the edges of both sides. The hemorrhage stopped for a few hours but started again about midnight. The next day the patient was taken to the operating room and under local anesthesia practically the entire septum was removed by cautery. Every possible point was cauterized in this area. After this the patient had no further hemorrhage and made an uneventful recovery. Antisyphilitic treatment was instituted.

Intraorbital, Extraoccular Glioma

By V. T. CHURCHMAN, JR., M. D.
Charleston, W. Va.

Only a few moments will be needed to present the findings of what may be considered an interesting case from several angles, and one which is not often encountered, especially in such limited practices as my own. Since this case presented itself there has appeared in the Southern Medical Journal of the current issue, a very similar case reported by Dr. Dunbar Roy of Atlanta, Ga., which some of you have no doubt read.

The patient, George S., a colored man aged forty-three, was referred to our offices in March, 1927. He gave a history of having noticed a small cyst or boil at the corner of the right eye in June, 1926. Shortly afterwards, the eye began to feel "full" and soon began to bulge. This bulging increased steadily and the vision became dim. By November of the same year the patient states that he was practically blind in the eye. After carefully questioning him we found that he had no pain at any stage of the progress and he stated that he had always been able to close the lid over the protruding eyeball. He had been intensively treated by a reputable physician for syphilis some years previously, and until the eye began to bother him, had enjoyed good health.

Upon examination it was found that the right eye protruded considerably, extending out past the bridge of the nose. There was a slight external strabismus and very good motion. Tension was only slightly raised if at all. The patient had 20/20 vision in the left eye with a correction of only a plus .50 sphere. The right eye was totally blind, even a strong light before the eye being imperceivable.

Ophthalmoscopic examination showed the fundus to be free from disease and growths, but showed the nerve head to be pearly white in color. An x-ray study revealed a moderately dense tumor confined to the orbit and apparently not involving the boney socket.

A tentative diagnosis of glioma or fibroma of the orbit was made and enucleation of the eye and removal of the tumor was advised.

Assisted by Dr. J. A. Arbuckle, we removed the eye and found a rather firm mass filling the wedge-shaped boney socket. The mass was removed intact with difficulty, and along with it, most of the contents of the orbit.

The tumor was pear-shaped and measured an inch in diameter at the base, one and one-half inches in length, and one-quarter inch at the apex. It was sent to a clinical laboratory and the following report was returned: "The sections show hyperplasia of the neu-

roglia cells with numerous fibrils between these neuroglia cells. The capsule is of neuroglia tissue also. The capsule formation often indicates slow but expansive growth. Pathological diagnosis—Glioma." We therefore had a glioma contained wholly within the orbital cavity but not involving the retina.

As for the prognosis it can only be said that it was explained to the patient that recurrence may take place even years later. At the present time, the patient states that he is entirely free from symptoms and the socket is perfectly healed. No radium was given the patient because we believe the tumor was encapsulated and was removed in its entirety at the operation.

ABSTRACTS

Fatigue in Children

George R. Irving; N. Y. J. Med., 27:14, Page 764, July, 1927.

The writer, in a well-written article, calls attention to fatigue as a symptom, and fatigue as a disease process, and pictures the "tired child" as follows: speech shy, hesitant and hurried with more or less stammering; complexion pale with spots of color near the eyes; posture bad though tensely held; facial expression abnormal; eyes partly closed with red-edged lids, muddy sclerae approaching icterus, and deep circles underneath, and extremeties in constant motion suggesting chorea or discomfort.

Among the nervous symptoms he mentions irritability, hypersensitiveness, uncalled-for "flood of tears", brainstorm or "tantrum"; difficulty in getting along with others; tricks of vision, puzzling to the oculist; lack of attention and "poor marks" in school; he "fights sleep," which is restless when attained, and awakens cross and irritable; susceptible to temperature changes, chilling or perspiring freely with slight change; itching and scratching without rash, and "black and blue" spots without signs of trauma.

The heart is rapid with extra systoles; there is mild allergy, and susceptibility to "colds" and other upper respiratory infections; the gums are spongy and bleed easily; there is accumulation of gas in the bowel; constipation is the rule; there is frequent urination, day and night, and enuresis with marked exhaustion; the genitalia are irritable with erection on slight irritation.

There is lowering of both physical and mental endurance, with susceptibility to infections and delayed convalescence.

The writer lists fifteen causative factors among them being: effort beyond ability; lack of balance between mental and physical capacity—the "high-voltage" child; competition with older and stronger members of school or family; association with adults; urging in school, skipping grades, etc.; studies outside of school; overplanned routine; daylight saving time which adds an extra hour of fatigue-producing activity; unsupervised athletics; overclothing; eyestrain; poor ventilation; dietetic errors; localized discomfort, and so forth.

Treatment is directed toward removal of the cause, or set of causative factors which is often very difficult; complete mental and physical rest, relaxation and regular routine over a long period of time, supervised by a competent, mild-mannered, gentle, but firm, individual, who will offer short explanations, answer questions, but permit of no argument. Sedative baths, mild corrective exercise, massage, sunshine and open air are given at the proper time. A complete geographical change may be necessary. Elimination is very important and should be assisted by forcing fluids, care of the skin, deep breathing exercises, and mild salines.

Sedatives, such as bromides, and the less harmful coal tar products, are beneficial in securing rest. Morphine derivatatives are to be avoided. Psychotherapy is not to be forgotten, and the treatment should, if possible, be turned into a game. Reading to the child and non-stimulating conversation are permissible under certain conditions, but the general plan by the nurse, or supervisor, is not to be questioned by the child.

Prophylaxis of the fatigue condition is largely a matter of education on the part of the person, or persons, having charge of the child; frequent checking up of the physical condition, and avoidance of causative factors.—W.B.H.

O-Iodoxybenzoic Acidin

Dr. A. G. Young of Ann Arbor describes how he first used this drug in asthma since it prevents formation of edema. No good results. Since he believed arthritis a symptom complex which may be associated with many of the same conditions which produced asthma, he began the work herein described. The various forms of drug and the various experimenters are discussed with some of their findings on tissue reaction and toxicity. The author's series of cases are fifty, unselected and with etiology unknown in most cases. These cases were studied from every clinical standpoint and every discoverable foci removed before use of this drug was instituted. His treatment then constituted hospitalization, o-iodoxybenzoic acid and no other drugs except analgesics. Orthopedic treatment where required was postponed until after a course of the drug was given. He describes how to prepare the solution and mentions an ammonium salt that is stable, an improvement over the acid drug. The solution must not stand, so prompt administration is desirable. In giving it intravenously, seven minutes at least must be taken. The common reaction is described and untoward results in a few cases, the chief one being thrombosis of vein at site of puncture. Eight doses given at bi-weekly intervals is considered a course. In some cases a second course is desirable, always waiting from one to four weeks after the first course before beginning the second.

Clinical results in his series showed 56 per cent markedly improved, 10 per cent moderately, and 14 per cent slightly improved, *i.e.*, loss or lessening of pain, loss or decrease in swelling, increase in range of motion, loss of stiffness, increase of function of joints, improvement in general health as evidenced by disappearance of fever, gain in weight, appetite, color, strength and general well being. Age and sex seemed to not be factors. In cases active at time of treatment, results were better. The more marked the deformity and loss of function, the less favorable the case.

The author believes the drug will be of real value as a preventive in arthritis. He has found it keeps the fever down in rheumatic infections and slows the heart rate. Oxygen rather than iodin seems the active part of the drug. T.M.B.

Chronic Arthritis

Dr. J. L. Porter of Evansville, Ill., addressed the Wisconsin state meeting on Chronic Arthritis, classifying it as (1) infectious, (2) atrophic, (3) hypertrophic. The infectious type begins often after an acute infectious disease as tonsillitis, measles or gonorrhea, subsides in a few weeks under rest and proper treatment and leaves a diseased joint. The atrophic group is more frequently seen in the poorly nourished subject, especially women, and attacks the smaller joints first, then the larger ones, eventually the spine. It is chronic from the start. The patient usually shows atrophy also of hair, nails, teeth, skin, muscles.

The hypertrophic group differs from the others both in pathology and clinically, occurs in patients over 45 years old and overstout. One or possibly two joints are involved, there is a story of pain and swelling for several months, the joint shows grating on motion, and the motion is easy but limited in extent.

Acute infections and focal infections, not apparently severe in themselves, are severe enough to start type one. Type two is not so much due to infection as to disturbance

of body chemistry and endocrine imbalance. The third type is local from the start, and whatever the cause, is irritant and stimulant instead of destructive. Chronic persistent autointoxication is usually a factor.

In discussing treatment, he mentions medical treatment as hopeless, urges us to find the infection, perverted metabolism or toxemia but not to let this hunt put the joint itself out of mind. Too many patients are walking around for weeks while their teeth and tonsils are receiving consideration; neglecting rest, the most important part of all treatment. Local applications are useful as are aspirin and soda internally, but traction to relax the muscle and straighten the joint, then immobilization by plaster or other splints are of the first importance.

He mentions that nothing gives so much relief in persistent sciatica as traction from the peritoneum down. The immobilization is used from four to eight weeks, then physiotherapy and massage as indicated, gradually doing without the splint. Atrophic cases require motion early. In hypertrophic cases, retain immobilization until all thickening and pain have gone, for joint will never recover as long as there is motion.

Treatment by foreign protein intravenously is of value, especially in subacute cases after the acute symptoms have subsided. It is at least worth trying although you never know until you have tried what you can expect from it. Typhoid killed bacilli and tubercle bacilli are better than milk and other proteins.

As to physiotherapy, massage and passive motion are of value at the proper time but any motion that causes pain is harmful. In cases with high acidity, hot baths of not over 20 minutes are valuable used daily over a long period.

Diathermy relieves pain and possibly stimulates absorption of exudate.

Alpine and other lamps are of doubtful value but sun baths are good.

Miron, an organic compound of iodin, is a new remedy that has helped some cases. Thyroid substances in small doses seem to help the atrophic group, its use controlled by metabolic rate readings. T.M.B.

Achylia Gastrica

In the July issue of the New Orleans Medical and Surgical Journal, Doctor Daniel N. Silverman, of New Orleans, in an article entitled, "The Newer Conception of Achylia Gastrica," reports a series of studies of interest.

He states that the usual carbohydrate meal (Ewald) often fails to promote gastric secretion and that beef extract and yeast extract, have been proven to be of greater value for this purpose.

A report of cases studied by Gollepertz and Vorhans of gastric response to histamine in achylia is of much interest, as 17 cases studied showed considerable amounts of Hcl following stimulation by this drug.

In pernicious anemia there was no gastric response to any form of stimulation.

The largest group of achylia cases in this series, and the one in which the writer is especially interested, is associated with disturbances of the gallbladder. In this group the reaction of the stomach glands to histamine injection is most suggestive. Ten patients were tested and nine responded with normal to hyperacidity values. The achylia was persistent in one individual who was past the age of sixty and a mild diabetic. She was seen in consultation with Dr. Lemann because of an intractable diarrhea. Four of these gallbladder cases had a previous cholecystostomy but no claim is made that the operation produced the achylia. In one case, however, gastric analysis before cholecystostomy showed a hyperacidity. Katsch and Kalk reported a case of cholecystitis in which the anacidity was responsive to histamine. Five months after removal of the gallbladder this responsiveness had disappeared. There is evidently further confirmation of the close relationship existing between the gallbladder and the secretory functions of its allied organs.

Doctor Silverman views achylia gastrica as a symptom and not a disease and that the etiological factor concerned in the production of the condition may emanate from many pathological states intrinsic and extrinsic to the stomach.—G. F. G.

THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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EDITORIAL

Delinquent Members

At the present time there are 1009 paid-up members of the West Virginia State Medical Association. The above figure is a substantial increase over 1926. The association is growing and expanding rapidly and more new members have been enrolled on the records within the past eight months than ever before in the same length of time during the history of the state organization.

The West Virginia State Medical Association is in a sound financial condition and the members are cooperating to the fullest extent in all phases of the association's work. Practically all of the component groups held splendid mid-summer meetings and will begin their fall activities in earnest this month. The association is looking forward to rounding out its most successful year on January 1, 1928.

If there is any "fly in the ointment" in this year's record of the association, it lies in the list of delinquent members. On August 1, 1927, there were 116 names on this list. The number is still a little over the century mark. We feel safe in saying that 75 per cent of our delinquents are simply procrastinating.

It is the personal touch more than anything else that will tend to bring the delinquent members of the association back into the fold. At your next county society meeting ask your secretary to read the list of his own delinquents and then see what you can do personally with your personal friends who have not paid up. A little cooperation along this line will reduce our delinquent list lower than it has ever been before.

The membership rosters of many of the component societies are 100 per cent. In many others there are only one or two delinquents. But if your delinquent list is a large one, why not get busy and cut it down now instead of waiting until the last week in December? Let's make 1927 our banner year.

Ambulance Driving

That ambulance drivers are too eager to take advantage of their right-of-way privilege on city streets and that they run at high rates of speed when not on emergency calls is the substance of a recent article in the *Atlantic Medical Journal.* The article has created some comment among West Virginia doctors, who are in sympathy with the tone and comment of the *Atlantic Journal's* editorial.

The editorial in the *Atlantic Journal* states in part:

"We are rather inclined to the belief that hospital administrators and undertakers should exercise more control over the speed maintained by their ambulances than is now in vogue. The change from horse-drawn to motor-drawn vehicles naturally has increased the speed, and since motor ambulances appeared, there has been no limit to the speed maintained in the streets, whether crowded or not.

"One who is accustomed to being on the streets daily, as physicians are, has a very good opportunity to observe the manner in which ambulances are given the right of way. The driver of the ambulance assumes this prerogative at all times. But should an ambulance always demand the right of way? An ambulance that is leaving the hospital on an accident case should have the right of way, not knowing the condition of affairs at the seat of accident. But even under these conditions the speed of the ambulance through the streets of a city should not be greater than will afford the driver reasonable control, for it should be borne in mind that having the right of way is no guarantee that the ambulance will not be run into or that it will not collide with some other car or property.

"The peace of mind of the patient certainly should be taken into consideration. It must be a source of anxiety to a patient, who cannot see what is doing, to be shut up in an ambulance, lying flat on his back, and unnecessarily hurried along, turning corners literally on one wheel. The unnecessary clanging of the bell must be a great annoyance.

"It is a common occurrence to observe that fire apparatus hurries at full speed through the streets to respond to a fire call, but that on returning to the fire house the speed is much reduced, frequently fitting in with the regular traffic."

Oracular O. O. McIntyre

[An inspiration following the reading of an article by McIntyre in the St. Louis Globe-Democrat, Sunday, June 19, 1924.—EDITOR.]

If there is any one thing more than another that is gradually filling us with a sense of rebellion it is the easy going manner in which certain of those outside of the medical profession fall into the habit of talking about the "mistakes of the medical profession." We realize it is always easy to make fun of a man in a silk hat and a cutaway coat. People are fond of teasing elephants too because there is about the elephant a certain dignity, an air of wisdom, a passion for security and a great reputation for stepping in on an emergency and performing whatever it is that demands to be done.

We have gone over many times before that all these things that distinguish the elephant are carried as near to perfection as is possible in any line of human endeavor in the medical profession. Some wisecracker will arise to say "Candid at last, putting the regular practitioner on the level with an elephant—perhaps a white one at that." Never mind, there are other occupants of the menagerie which fit some of the clamorous outsiders, the screaming cockatoo being one. It will ever be easy to assail an age old institution that has done its work so well it is accepted like drinking water—but oh, if the pump would ever go dry!

There is something about us Americans, and they assure us the English have it as well, that makes us have the greatest veneration for those who can in smart and flippant language ridicule us. Down at the last analysis very few of us happen to be funny, comic, or witty. True we "get off" a lot of stuff but it is seldom original and nearly always decidedly third or fourth hand. Americans are really a serious people. If you doubt it look at the way they look at Evolution or witness how they gulp down the claims of a new cult or the so-called wisdom on a nostrum label. Ponder also their delight over the comic strip and the tabloid paper. Here a fellow like H. L. Mencken or his more ribald contemporary George Jean Nathan come pretty near to being elevated to the place of all places. Will Rogers, more kindly, is eagerly followed. There are a lot of lesser lights writing under the guise of columnists and special writers of great newspapers. Among these is O. O. McIntyre who writes very entertainingly. Entertainingly does not mean however with deep understanding—not always. By some hocus pocus we, readers, ascribe an all-wise perfection to men like O. O. McIntyre so that he can write on the third term, or around the world flying, breakfast food or baby feeding and we feel he knows what he is talking about. Naive we are and as trusting as Little Red Riding Hood. So, then O. O. McIntyre takes a whirl at the profession in a recent writing. "Something about Doctors" he calls it—his idea about the word "something" and ours being different. He was urged in his daily snooping around for "something" to write about to do this by reading Dr. Morris Fishbein's book, "The New Medical Follies." We dont know whether Doctor Fishbein could make O. O. McIntyre change his position like Henry Ford or not. It is extremely unlikely since Fishbein could hardly prove he had ever been damaged by McIntyre to any extent even in mills.

Says McIntyre: *"I know the medical profession fairly well. Indeed I believe I know its weakness and strength better than the average layman. As a class they rank high. Many of them are my very good friends. We all know of their self-sacrificing attitude to humanitarian ideals."*

"Any medical doctor, if he is honest, will tell you frankly medicine is a very inexact science. All he can do is struggle hopefully and courageously in his task of healing disease. Like faithful workers in other fields, he makes gains, slips back and carries on."

You will readily observe McIntyre admits he is going to be a good critic. Any man writing daily on this, that and every subject is going to be sure to turn out the real, honest-to-goodness opinion on a big profession that is so all embracing, even if it is well nigh impossible for a man actually

engaged in it to feel he knows it even fairly well. Furthermore whenever you see a preamble like the one above you can always get ready for something somewhat different in the article. Well it is coming all right. Mr. McIntyre goes on: "Any medical doctor if he is honest, will tell you frankly medicine is a very inexact science. All he can do is to struggle hopefully and courageously in his task of healing disease. Like faithful workers in other fields he makes gains, slips back, and carries on."

At first reading this is a beautiful paragraph, and a faithful repetition as to meaning of hundreds we have seen before. Closer analysis shows it is in the familiar "damning by faint praise" class. McIntyre has to fill his column; we presume it can't all be new stuff.

Medicine is not an inexact science. The human body is the variable factor. There is quite an intelligent reason for saying such a thing. We are heartily tired of hearing about the "inexactness'" of medicine. No scientific endeavor we ever heard of has investigated and analyzed every conceivable possibility like medicine. It would all be known could we investigate the human machine like any other. Since we can't and never will we find there is objections even to the use of the lower animals. This in the face of the never ceasing hunter and fisherman plying their excursive vocations and thousands of animals dumbly submitting to the rigors of the abbatoir.

Inexact, Mr. McIntyre! Then what is exact? The law? God forbid even the asking. Astronomy? What they know is no farther along for them than the ordinary "leaking heart" is for us. If speculation was ever a favorite pastime it is with astronomers. Religion? Mr. McIntyre is a column writer with his ear to the ground and we will not engage him in this realm. Politics and statesmanship? No one asks even a slight anchorage from them. Chemistry? Well there is exactness here up to a certain point. It is the physiological chemist however who cannot tell us so many things about the variability of the human machine who stands in the way of even faster progress in medicine. Mathematics? Still there are many ignorant morons who go about trying to understand; when a man is thirty and his son five that makes him six times as old and in five years he is thirty-five, the son is ten, which is only three and a half times. Of course "it is easily explained" but to a moron it still seems inexact. Civil engineering and architecture? Ought to be but isn't as any one who has seen the horrors of some new buildings will admit. Business? So variable and inexact that a few men in Wall Street can make thousands lose all they have by a mere plotting together in an afternoon. The newspaper business? The only one thing that saves this profession from daily death is the word "allege".

Most people are entirely relieved of their troubles by the medical profession. Where people submit to a few days' overhauling with a close scrutiny they have a diagnosis in many of their ailments by a quick relief and they have in the main spent no more time than the automobile takes in having its mechanism inspected. For years the medical profession has published their mistakes. Rather reluctantly the newspaper business which Mr. McIntyre serves has adopted this, so that several big ones—and not many at that—have a "truth column" where they half gracefully take back what they said a day or so ago. No, gentle reader, it is not on the page where the original article appeared. The day when all lines of human endeavor go into details about their failures like the medical profession for years has—that day medicine will clearly shine out as fearfully and wonderfully exact in comparison. Doctors have slipped back and they have told the world they did. It was so novel, it gripped the imagination of some people so hard they came out of the wash so deeply impressed with "the idea" they forget the overwhelming good for the very secondary and minor "bad." Cancer is a favorite topic with these elegant and ingenious doubters. Cancer has been so thoroughly investigated that we will warrant that no subject has ever had so complete a history. If Mr. McIntyre would care to do it, he could spend the remainder of his life reading about cancer and still

never duplicate his reading. It would all be so exact it would give him a headache. Logically mind you—step by step—every avenue has been traversed. Well then why has not a cure been found? Why don't they print all the colors on a lithograph at once. The way hasn't been found, yet everything up to that point is exactly known. Does that make lithographing inexact, haphazard? No it does not. Neither is medicine. Due to the quality of the dyes sometimes new tones wholly unexpected occur in color printing. Exactly the same in the human body, new combinations due to the vagaries of the metabolic process are created. No one can foresee them any more than in forecasting the weather. Yet the measurement and analysis of the hundreds of day by day combinations even in the case of the air we inhale and exhale are so carefully and minutely known and performed as to be indescribably exact. Medicine is inexact here and there but it is a hilarious figment of illusory cerebration to endeavor to create the common impression that to consult a doctor is as gay and festive a "hit and miss" affair as spinning the wheel at Monte Carlo. If medicine is inexact then it needs a very glaring term of inaccuracy for the rest of this fitful life.

Next he says: *"I have just read a book called 'The New Medical Follies,' by Dr. Morris Fishbein, head of the American Medical Association, which suggested these observations. No member of this association can exploit himself or a remedy he may have discovered without the sanction of this organization. And it is only fair to say that it has exposed much patent medicine quackery and similar charlatans in the past."*

We should like to ask Mr. McIntyre since he knows us fairly well to pick out an individual case anywhere, anytime, anyplace, where this policy even granting it is so has worked any hardship on anybody. On the other hand how would the charlatans and quacks have been exposed had this organization at considerable pains not been there? How about the Associated Press and the various syndicates and advertising organizations that are as arbitrary as anything afloat about what and what cannot be printed? If a big advertiser in a big daily would kick on something Mr. McIntyre was going to print, would he get it printed?

Continuing: *"Yet Dr. Fishbein, it seems, has become self exploiter par excellence. Even the title imitates the theatrical showmanship of Zeigfeld. Zeigfeld seeks to glorify the American girl. And Dr. Fishbein seeks to glorify Dr. Fishbein."*

This paragraph speaks for itself. Who is Mr. McIntyre glorifying day by day? We don't know him even "fairly well" but we will bet a new hat he feels pretty good over what he writes. In fact he has succeeded so well in glorifying the name O. O. McIntyre that he can write an article like this and get away with it as worth while, novel and entertaining and be paid by some syndicate or newspaper a very good price. He doesn't hesitate at all in his numerous writings to appropriate anything he wants to yet it is a harsh and annoying piece of egotistical self glorification for Dr. Fishbein to use the word follies. Zeigfeld obtained the word "follies" from Paris. As far as we know we thought it was a pretty old word and that Paris got it from something Marc Anthony did—but you can never tell. This whole paragraph is simply a so-called columnist's license wherein they say something which in the thoughtless processes of daily newspaper reading passes as wit—possibly illuminating satire. To ridicule Dr. Fishbein by linking him with the Zeigfeld Follies resembles Thurston, the magician, who used to delight to attend Rotary Clubs and remove silk stockings from the back of a prominent minister's coat. An effective campaign must often be linked with a single name—as for instance, O. O. McIntyre in his great quest to be informative.

He adds: *"He appears to me to accuse every other school of healing save his own of being unworthy. That is bigotry that will not be swallowed in this enlightened age. I know many intelligent men—intelligent, indeed, as Dr. Fishbein—who have found relief from human misery in other methods of healing just as thousands have been healed in the school to which Dr. Fishbein devotes his zeal."*

This is quite trite and hearkens back to an imitation of Bernard Shaw. You can't expect a columnist to write something new every day. Coming down to the final analysis there can't be but one school of medicine and that is the intelligent use of what we have in this world in the way of pathology and then matching it with whatever scientifically and reasonably and naturally substitutes normal histology and physiology for that pathology. Return to normalcy so to speak. The American Medical Association represents that idea and Mr. McIntyre knows it. If he doesn't let us explain to him.

Mr. McIntyre runs a column. The chiropractor also runs a column—the spinal column. We will grant Mr. McIntyre has a big following—which we happen to know he has. There may be cases here and there where running up and down a spinal column has done something or other. Anyway for purposes of hypothesis we will say that wonderfully reliable old set of bones has been juggled about so they do not impinge. Well—the idea is you couldn't make a whole newspaper out of what O. O. McIntyre writes and you could not make a whole system of healing out of clicking around the vertebrae. We hope this makes clear what we mean.

Anything a columnist says will not change the idea of the facts even if he is saying things as near as he can after the fashion of Sinclair Lewis in Arrowsmith. There isn't anything provided it showed steady consistent results day after day that wouldn't be used by doctors. Sporadic cures in anything do not go for very obvious reasons. Not a single healing system Mr. McIntyre mentions has ever been able to meet all classes of diseases day in, day out, and travel on its own bottom. Somewhere, someplace, sometime in this imperfect world they have to rely on the medical profession—the doctor around the corner—to help them out sooner or later. In other words no community could get along without regular medical men where as it can quite easily flourish without any of the others. Why? Because any trained medical man can quite easily, if he would so choose, do the basic treatment of what any of these other so-called healing arts profess. The reverse however is not true. Mr. McIntyre is going to say, how about these people who go from one doctor to another and get a whole handful of diagnoses? And then in the end are healed by Coueism or osteopathy? This idea that hundreds of people are incorrectly diagnosed or else have a dozen different diagnoses from a dozen different doctors is far from correct. In actual practice it happens but seldom and then it is because many medical men are located where they cannot reach a laboratory or other instruments of precision. Of course there are the Cabot figures as well as the system of checking as done in the Massachusetts General hospital. Look them over carefully and you will find this a fact they err as regards the fine points, that is if you can be allowed to term—they err as regards ultra exactness—the kinds of cells in a tumor; the exact heart value involved; the particular kind of streptococci; the exact division of foreign proteid and the like. These fine distinctions had no bearing on treatment which met all human requirements. We've been at many autopsies where the patients had been very sick—where nothing was found. If nothing was found after death—the doctor was not very culpable in finding nothing in life. Even at that we are beginning to understand why this is so. The bio-chemistry and physiology of the liver offering almost insurmountable obstacles is on the threshold of being understood. Pernicious Anaemia and other conditions will probably account for a lot of these obscure deaths. There is nothing clear, orderly and intelligent that is not promoted by the American Medical Association.

Finally Mr. McIntyre says: *"To intimate that these people are merely dupes and fools is a silly and undignified procedure. There have been cures by osteopathy, homeopathy, Christian Science, Coueism and even miracles of Lourdes that cannot be laughed off. Of course, there is quackery among all these various schools of healing, but there are also quacks, I happen to know, among the school Dr. Fishbein represents. I can furnish him a handful in my own neighborhood any time.*

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

Medical tolerance is just as important in many ways as religious tolerance. It can be helped by muzzling Dr. Fishbein."

This paragraph looks pretty good. It puts Mr. McIntyre "in right" with a whole lot of subscribers. However it is all a relative matter. Mr. McIntyre could go down in Georgia where the Rev. John D. Mell is located and with other kind of articles make a hit. Dr. Mell says "If the Bible and the microscope do not agree, the microscope is wrong. I will believe the Bible if it makes every laboratory in the world a liar"; also the Rev. Marion Hull, "If scientists want to test the truth of any theory they should search the Scripture and if the theory and the Bible do not conform the theory should be rejected." Also the Hon. Hal Kimberly, member from Laurins county. "These three (Bible, hymn book and almanac) are enough for anyone. Read the Bible. It teaches you how to act. Read the hymn book, it contains the finest poetry written. Read the almanac. It shows you how the weather will be. There isnt another book that is necessary for any one to read and therefore I am opposed to all libraries."

We know and Mr. McIntyre knows and Mr. Sinclair Lewis knows there are thousands of people like this, there always have been, to make a Galileo retract or a Harvey in danger of his life or a doctor or a minister with modern methods a local object of scorn.

Ignorance can almost be called a disease. Could this member find a rules of order to run his legislature on in the Bible? Does the Bible tell you how to make electricity or an engine to run an automobile or a flying machine? Does it tell you what happens in diabetes? How to splint a fracture or apply a tourniquet? It does not and you could search for years and not be helped. And yet the Bible is the greatest book in the world. It was not intended to be an encyclopedia of action. These people merely say "Interpret the Bible as we do or we will hold you to scorn." The Bible is a book of ethics and procedure to help you save yourself from error in conduct—that is enough of an aim for any book. Now there are people who have nothing wrong with them as far as pathology goes and they entertain the same kind of opinion towards modern medicine these quoted people do to religion. Science simply has to forgive them for they know not what they do. Mary Magdalen is not the only sad story in the history of religion—a child with diphtheria worked over by people who believe in some irregular practice of religious healing that is refused the boon of antitoxin is equally as deplorable. People who are against libraries and antitoxin are to us more of a problem than cancer.

The cures described by Mr. McIntyre are affected on minds residing in bodies with nothing pathological about them—or if there was real pathology unless the patients bodily resistance (existing more or less in everybody) overcame it, the pathology is still there. The agencies eulogized by Mr. McIntyre do good in furnishing a dominant thought that overcomes the mentally ill one —there they stop. That is laudable enough and worthy in every way. When it is confused with the cure of pathology and disease it is essentially wrong and if phases of it have to be ridiculed Dr. Fishbein is highly qualified to do it. Mr. McIntyre cannot be expected to do everything.

Cancer and its problems may be solved over night but who will ever enlighten some people? These same people and a milder strain have some inherent principle in them which they are pleased to regard as "sin" —"original sin"—and they see disease and it as identical. Sometimes in a certain class of mental cases who have normal bodies and to all appearances normal minds and who furnish a big percentage of those who are never helped by regular doctors and who later turn up cured by some of the agencies beautifully mentioned by Mr. McIntyre—we are inclined to believe the relationship between imagined sin and fancied disease is very, very close.

We should like Mr. McIntyre to flush up his handful of quacks in his own neighborhood—that is quite a neighborhood and we are tempted to inquire if other false alarms live in it too. We would like to bet he can't do it, and give his proofs. Medical tolerance may be the same as religious tolerance except that it must not be confused

with health enforcement. The Medical Profession has built up an elaborate prophylaxis which protects Mr. McIntyre's celebrated neighborhood from contagion and infection. It does no one any harm save that it curtails the medical profession's own revenues. We do not know of any one besid es doctors having prophylaxsis. We never heard of a columnist for instance warning any one that what he wrote that day wasn't worth while reading. When warned that disease exists the average American feels his civil liberties are being assailed. He rages again when warned against quacks or charlatans. He feels he ought to be allowed to trust them like he does the stuff his bootlegger sells him as the real thing. Mr. McIntyre says Dr. Fishbein ought to be muzzled. We feel that way about Mr. McIntyre. We know people who feel that way about us. It is a great world after all and in the end none of us—more is the pity—will be muzzled.

Still after the smoke is all over you perceive and we perceive that Mr. McIntyre is intolerant too. What he doesn't think is exactly right ought to be muzzled. He sits up in his high place and elects to write about almost everything. He must miss it now and then. We know it is too late for him to take a medical course and we don't see how he could talk as he does unless he did. Of course we all have a right to our opinions but you can't speak authoritatively about the medical profession just because you know a few doctors fairly well—and a whole handful of those in your neighborhood being nothing but quacks. H.M.H.

Practice for Doctors

Members of the medical profession who desire to keep up on the current literature of the day in regard to what the reaction of the public is to our various endeavors are invited to scan several timely articles. It is hardly to be expected that you will wholeheartedly accept them, but inasmuch as they are given wide circulation among those from whom you derive your living it is well to know just what is going on.

First is an article given prominent place in the *New York Herald-Tribune* as an editorial of August 15, 1927, and headed "Practice for the Doctors." It is based on the decision of the British Medical Association to have the general practitioners join cooperative scientific associations, and it proposes the rather revolutionary idea to make the ordinary medical man take part in actual research work.

The second article of interest is in the August *Harper's* and is by the prolific gentleman, Doctor Joseph Collins. It is given prominence next to the main essay on the cover and gives directly to the readers of that magazine a view as to whether "Should Doctors Tell the Truth." Doctor Collins thinks for the most part that you should not. This opens up a lively topic well qualified to invite a wordy symposium at some medical meeting.

The third is in *Colliers* for August 20, and is headed the "Pills that Flesh Is Heir To." It is by that celebrated personage, "Uncle Henry." Along with the title is an excerpt which will give an idea of its character. It says:

> "If Mother Nature had intended the various glands and organs to be a matter of general information, she'd put 'em in plain view instead of below the street level."

This article comes under the category of the so-called two-edged sword. There is in it a lot of sly humor, good natured irony, at times perfectly legitimate satire, but on the other hand, some fellow with an appendix about to let go might read it and forget that it, like a bursted water main which is also below the street level, requires attention—immediately—at once—quickly—all Uncle Henry's to the contrary, and what's more in both cases the pavement of brick and the pavement of epithelium will have to be considerably torn up and repaired.—H.M.H.

The Daily Paper

One of West Virginia's largest daily newspapers has recently requested the State Medical Association to assist in promoting better relations between the editorial staff of their

publication and the hospitals of the city in which the newspaper is located. A letter from the city editor of this newspaper read in part:

"A man was recently brought to a local hospital suffering from knife wounds that will no doubt prove fatal. It was a big story and two reporters were assigned to it. It was very late when the story broke and we had only 45 minutes to make the state edition. The reporters worked the only source available of that hour, the hospital, and they were given no satisfaction to queries concerning the case from the telephone operators at the hospital. In one instance the girl was discourteous enough to hang up the receiver."

Whether or not the complaint of the newspaper is justified, it does furnish food for a little thought. For it must be remembered that practically all of the legislative and educational battles of the medical profession depend for their success greatly upon the columns of the daily newspapers. Without the support of the press of West Virginia, our association could accomplish little or nothing in the way of legislative and educational reform.

To quote further from the letter in question, "We have always regarded the medical profession and the hospitals of our state in the highest esteem and on numerous occasions, as our files will show, we have, to use newspaper parlance, 'gone to bat' for them in various matters in which they were concerned, particularly legislative. We believe that the profession is engaged in one of the most wonderful works in the world, and we want to do all we can to help educate our public as to the great good they are doing."

Apparently this newspaper lodged its complaint in all good faith. It was pointed out that discourteous treatment was the exception and not the rule. It was further pointed out that when one of the doctors on the hospital staff was finally reached, the story was obtained without further mishap and was cheerfully given.

We neither uphold the newspaper in question on its complaint nor condemn the hospital in question on its telephone operators. We simply call attention to an incident in the affairs of our state association, knowing that our members will take it for what it is worth.

Civil Service

The United States Civil Service Commission announces the following open competitive examination: Assistant Medical Officer, Associate Medical Officer, Medical Officer, Medical Officer and Senior Medical Officer. Applications for these positions will be rated as received at Washington, D. C., until December 30.

The examinations are to fill vacancies occurring in the Indian Service, the Public Health Service, the Coast and Geodetic Survey, the Panama Canal, the Veteran's Bureau Field Service, and other branches of the Federal classified service throughout the United States.

Specialists are needed in practically all branches of medicine and surgery. There is especial need for medical officers qualified in tuberculosis or neuropsychiatry.

Competitors will not be required to report for examination but will be rated on their education, training and experience. Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or customhouse in any city.

Teach Children Sex

While some children are ready for and need sex instruction of a simple sort as early as the fifth year, educators are agreed that all children by the time they finish grammar school should be fully inculcated with a wholesome and respectful attitude toward sex.

The average teacher is not fitted to give this instruction, which should come properly from the parents, says *Hygeia*. But few parents know how to give such instructions nor can they maintain a sufficiently impersonal attitude toward their children.

The physician has the proper language, the necessary knowledge and authority and the confidence of the child. He can stress essential, health-forming habits and clear away misunderstandings and the mystery that usually surrounds sex.

COMPONENT · SOCIETIES

Ohio County

Dr. Edward Phillips, after going through trials and tribulations which read like some knight of old, meeting one dragon or monster after another in mortal combat, came out victor in the end. An appendicitis with peritonitis; an obstruction; a re-opening; lastly a liver abscess, are to us a most formidable array. We congratulate the doctor on his fighting ability. It had a lot to do with the outcome. Throughout his ordeal he was visited and re-visited by his old chief, Dr. Deaver, who was ever anxious about his recovery. His local attendants were his old friend, Dr. John Gilmore and Dr. Joe Caldwell. We hope we are not overstepping our limitations when we say Dr. Deaver was highly pleased with their work—part of which consisted in relief of the obstruction.

A number of doctors here attended the Shrine meeting in Atlantic City. Dr. George Vieweg, being Imperial Potentate, Dr. E. L. Armbrecht and others were in attendance.

Dr. Arthur Hoge returned Saturday, July 1, from a long vacation, mostly spent in and around New York.

Dr. P. Southgate, formerly resident pathologist at the Lakeside hospital, Cleveland, Ohio, is now pathologist and chief of laboratory at the Ohio Valley General hospital. He assumed his duties July 1, 1927.

Dr. M. B. Williams and family returned from a vacation, spent as usual in traveling about by automobile. If managed right this seems to be an ideal way to have a good time —always providing you have no set destination.

As this is the era of aviation it is well for the medical men to have a part in it and the performance of Dr. Rankin seems to suggest you enlarge your garage now so as to have it ready for the great day when you will fly to your patient. By the way this may solve the problem of reaching the rural communities over which so much speculation rages. The main obstacle evidently seems to be not in the safety of the plane but a good place on which to quit flying. So many things in this world are so difficult to stop—flying seems to be particularly unfortunate, not in getting started but, where, oh where, to stop.

Dr. D. A. MacGregor, former secretary of the West Virginia Medical Association, is confined to the Ohio Valley General hospital, having undergone a surgical operation shortly after his return from White Sulphur. The condition was not serious and he is well on his way to recovery.

Those of you who were at the last annual meeting can well remember the thrilling moment when Dr. Henri P. Linsz in talking about the illustrious deeds of the past presidents came to the august name of Dr. Robert Reed. For some reason Dr. Henri became entangled and it was very much like static on the radio. His listeners at once became aware he was wrestling with some internal inhibition. He started to give the reason why Dr. Reed was not there and for some reason failed. Then he read a letter from Dr. Reed which was couched in beautiful English but still was not very clear. Dr. Jackson might have felt that one of the past presidents were in some kind of a predicament—had made a mistake in his income tax return of a dollar or two and was about to be sent to Atlanta or something of the kind. Why Dr. Linsz hesitated is still somewhat in doubt. Was it because there is no Henri the third? Could he be envious? Oh was it because his innate sense of modesty shared alike by Dr. Reed forbid him coming out before so innocent a gathering and boldly proclaiming the expected advent of Robert Reed III, who arrived as per schedule and is now one of the royal babies in the creche at the Ohio Valley General. President Ogden, realizing that more

news was expected by the audience, cleared the air.

We congratulate numbers one and two on number three and hope it will become a habit and make a good regular lineage of eminent medical men. Nothing so helps the hesitant young man to choose the medical profession like seeing a father have his son take up medicine or surgery and carry it on and on. It makes the undecided one feel that after all its much described vicissitudes the profession of healing is a noble and worthwhile endeavor. The Reed Junior Family are all doing well—and it is idle for us to say there is a wonderfully proud grandmother and grandfather.

Dr. O. M. Staats and family are touring Europe just now. It was South America last year. He belongs to the same society as Dr. Hupp which believes a doctor should enjoy this world while the enjoying is good.

On July 1, 1927, a very efficient and progressive quartette of internes left the Ohio Valley General hospital. Dr. Harold Harpfer will start locally in general practice at Lennox. Dr. J. W. Pyle will enter the battle at New Martinsville, Dr. J. Knox Gibson will be associated with Drs. Abersold and Nolte. Dr. Wm. Marsh will locate in Warwood under the wing of Dr. Schwinn. They have all been very popular with the staff as well as the hospital generally.

The new internes are Drs. R. H. Zinn, J. E. Stephenson, J. A. McCurdy and A. Osterman. The scheme of rotating service has been much improved and a satisfactory instruction in X-ray, laboratory and anesthesia, as well as in the dispensaries has been worked out. The new men enter with the best wishes of the profession generally.

The members of the interne staff at Wheeling hospital have also completed their course with a pleasant and profitable year behind them. Dr. Bostic will be associated with his father in North Carolina. Dr. L. A. Lyon has not decided where to enter practice, while Dr. Stupp will try to wrestle with the State Board of Pennsylvania. We wish him good luck. The new staff has not been fully assembled. Dr. C. I. Martin will take up his duties shortly. Dr. W. C. Poole had to be operated upon, shortly before his term commenced. Should the full personnel not be made up here in the next four weeks we know of no better opportunity in the country for a young man to obtain a full general knowledge of medicine and surgery than at this hospital.

H.M.H.

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker Medical Society held its mid-summer meeting at the Arlington hotel, Parsons, at 3:30 o'clock on the afternoon of July 28. In the absence of the president, Dr. J. L. Miller presided. During a short business session, the advisability of joining Pocahontas county to the Barbour-Randolph-Tucker society was discussed, together with affiliation with the Harrison, Marion and Monongalia societies in their annual gatherings.

Dr. Guy Cromwell, who was on the program to report a case of tetanus, was unable to be present. Dr. Miller, however, made a partial report of a case of tetanus recently treated in the Allegheny Heights Hospital in which an unusual amount of tetanus serum was used, with recovery of the patient. It was the concensus of opinion of those present that tetanus from injury was rather a rare complication in that section.

Dr. W. E. Whiteside read a timely paper on "Whose Business Is It?" in which he pointed out that there was a tendency to supplant the regularly qualified physician by the health nurse, the teachers in the public schools, the county boards of health and the boy scouts. All of these, he said, are attempting to displace the regular practicing physician by prescribing, diagnosing and treating cases with all the effrontery incident thereto. Dr. Whiteside's paper was discussed freely by the members present.

An impromptu report on the state meeting at White Sulphur Springs was made by Dr. W. W. Golden, who commented favorably upon the high order of the papers and said that he thought the June convention was one

of the best ever held by the state association. Following the talk by Dr. Golden, Dr. H. H. Bolton reported on three unusual cases that had recently been brought to his attention.

The meeting adjourned with a dinner at the Arlington hotel, to meet again at Elkins in September. J.C.I.

Fayette County

Fayette County Medical Society held its monthly meeting in Oak Hill Rotary Hall of the Masonic building at Oak Hill, W. Va., Thursday, July 14, 1927 at 8 p. m. The scientific program for this meeting consisted in symposium on diet furnished by the Oak Hill hospital, McKendree hospital, Coal Valley hospital, the three hospitals of the county. The Oak Hill hospital was represented by Dr. Wood, who presented a very interesting paper on diet in diseases in the gastro-intestinal tract. Dr. M. V. Godby opened the progress from the McKendree hospital by a discussion on the treatment of diabetes in general. Dr. Jackson of the McKendree hospital staff then followed Dr. Godby with a very interesting paper on diet in the treatment of diabetes mellitis. The Coal Valley hospital of Montgomery, W. Va., was represented by Dr. M. C. Borman on diet in nephritis, diet in gall bladder disease. In the final discussion of these papers, the subject of diet and typhoid came up and was very interestingly discussed by all the physicians present, the trend of opinion among the younger men being towards more liberal feedings; the older physicians present being heard from in the discussion as still adhering to a more restricted diet in typhoid.

G. A. SMITH, *Secretary.*

Greenbrier Valley

The Greenbrier Valley Medical Society held its regular mid-summer meeting at 8 o'clock Wednesday evening, July 27, at the office of Dr. H. L. Beard of Lewisburg. Dr. D. G. Preston, president of the society and first vice president of the state association, presided at the Lewisburg gathering.

The meeting was featured by a paper on "Heart Diseases in Children," by Dr. J. C. Flippin, dean of the Medical College of the University of Virginia. A large number of representative physicians were present and several informal talks of interest to the profession were made. A buffet luncheon was served during the evening by the host.

The Greenbrier Valley Society expressed its appreciation for the high honor conferred upon Dr. Preston by the state association at the White Sulphur convention. The election of Dr. Preston to the vice-presidency marked the first time the Greenbrier society has been honored. The society itself has doubled its membership within the last two years and is one of the most active component groups in the state. C.F.M.

Raleigh County Meeting

The mid-summer meeting of the Raleigh County Medical Society was held at the home of Dr. and Mrs. W. D. Simmons at Slab Fork on the evening of July 28. Dinner was served at 6:30 o'clock, followed by the scientific program.

Three splendid papers were presented during the evening, by Dr. J. E. McKenzie of Beckley on "Chronic Progressive Deafness," by Dr. W. W. Hume of Beckley on "Acute Suppurative Otitis-Media," and by Dr. L. G. Houser on "Refraction." The meeting was well attended and great interest was shown by the society members present. E.S.D.

Medical Education Report

Copies of the "Preliminary Report of the Commission on Medical Education" can be obtained free of charge by readers of *The Journal,* according to a recent communication forwarded to this office by James R. Bloss, M. D., former editor.

The communication, written by W. C. Rappleye, M. D., states that "We should be glad to supply these copies without charge, and anyone desiring a copy of the report can obtain it by addressing the Commission on Medical Education, 215 Whitney avenue, New Haven, Conn."

GENERAL · NEWS

West Virginia Boasts of Splendid Mineral Waters

We often hear the remark, advising the tourist to "See America first," which in our opinion is worthy of repetition by every physician in West Virginia. We say this from no selfish standpoint, for there is no other state in these United States with such diversified scenery of lofty and magnificent hills and mountains, waterfalls and gorges, which are among the wonders of nature, green valleys bordered on either side by precipitous cliffs and rolling landscapes, undulating uplands covered with the finest bluegrass on earth and dotted with orchards, producing the finest quality of all varieties of fruits. In various sections throughout the state, especially along the Allegheny foothills are mineral springs of different chemical analyses and some of world-wide reputation, and all easily accessible over our recently completed system of hard roads.

Springs and resorts are often spoken of as a "playground for the rich," which in a sense may be true, but there are many others with equally potent qualities and easily within reach of the less fortunate. All within a radius of a few miles are the White, Red, Blue and Green Sulphur Springs, the waters of each containing a certain amount of sulphur which in chemical combination with the other chemical contents, which when exposed to the air produce a deposit in accordance with the color, giving its name. Many diseases are primarily due to faulty metabolism or chemical changes constantly taking place in the body, and the therapeutics of mineral waters depend entirely upon the proper balancing this metabolic process. Since the discovery of radium, there is much speculation as to the radiant energy contained in the waters of many of our springs. The fact that immersion for twenty minutes in a bath at 98 degrees will raise the body temperature from one to one and one-half degrees is evidence of some influence over metabolic changes other than the mere application of external heat.

Many patients are greatly benefitted by the use of mineral waters, but like selecting a climate for one with tuberculosis, we must take into consideration the patient's needs and the chemical composition of the water. The process of metabolism is a complicated affair, and any deviation from the normal may be due to pathology in one or several organs, hence the importance of first knowing your patient, and then selecting the water adapted to his needs. C.A.R.

Virginia Medical

New appointments at the Medical College of Virginia, Richmond, include Dr. William B. Porter, professor of medicine; Dr. Sidney S. Negus, professor of chemistry; Dr. J. C. Forbes, assistant professor of chemistry; Dr. Lewis C. Pusch, associate in pathology, and J. G. Jantz, associate in anatomy. In addition to these full-time members of the faculty President Sanger has announced a number of important appointments and promotions on the visiting staff of the college.

New Books Received

How to Make the Periodic Health Examination, by Fisk & Crawford. The MacMillan Company, New York, $4.00.

"Should We be Vaccinated," by Bernard J. Stern, Harper Brothers, $1.50.

"Mineral Waters of the United States and American Spas," by Fitch, Lea & Febiger, Philadelphia, $8.50.

"The Human Body in Pictures," Physicians & Surgeons Book Co., Brooklyn, N. Y.

"An Illustrated Teaching Manual," by Jacob Sarnof.

Doctors Cultivate Science Rather Than Salesmanship

"Has the doctor of today spoiled his patients?" is the question asked by Frederick Damrau, M. D., in the July issue of *Scribner's Magazine*. The author maintains that the modern doctor has done just that and that he has done it by cultivating science rather than salesmanship. Dr. Damrau does not, however, advocate the neglect of science, nor does he consider it particularly desirable that doctors should become salesmen. His point is that the public should wake up to a realization of the fact that, owing to the advanced state of medical science, the doctor of today must devote himself so exclusively to the study of his profession that he has little time left for the cultivation of a winning "bedside manner." Dr. Damrau contrasts in an amusing and instructive manner the methods of the old-fashioned physician and his modern colleague.

Before the days of diphtheria antitoxin, the kind-hearted physician would sadly tell the parents: "This is diphtheria. I am very much afraid you will lose the child." Then he would sit patiently by, waiting to detach a membrane with his finger, or give whatever simple aid the limited state of medical knowledge of that time permitted. If the case was serious, time meant nothing to him. He would hitch his horse to the lamp-post and send a small boy around to the office to tell the waiting patients that he would arrive when he got there. Gently he would close the child's eyes after the last gasp, and soothingly assure the stricken mother that Gods will cannot be denied.

Let us rehearse the diphtheria drama as it occurs today. Baby has a sore throat, and so Dr. Modern is called on the telephone. He arrives in a Ford.

Grandma is shocked by the doctor's appearance. Where, oh, where, is his goatee? Can this smooth-chinned, impudent fellow, who looks more like a bank clerk or an actor in a stock company, profess to be a real doctor?

When the doctor looks at baby's throat, he says: "This looks like diphtheria, but I'll have to take a throat culture to make sure."

Then grandma pipes in: "When I was a girl, the doctors knew their business. They didn't have to poke sticks into a child's mouth to find out whats what."

The antitoxin is given. Then, without any patting of hands, soft soap, or bla-bla, the doctor is off.

The child recovers, thanks to the antitoxin. The parents take the recovery as a matter of course, as one accepts a suit that has been dry-cleaned properly.

One day the garrulous gossip from the next apartment comes panting into the room with a newspaper item. The heading reads: "Child Dies in Five Minutes after Overdose of Antitoxin."

Antitoxin! That's just what Doctor Modern "experimented with" on baby!

Hastily baby is examined and, surely enough, some blotches are found on his skin. Then follows the hurry call for another doctor, and Doctor Modern's monthly statements suffer the ignominious fate of 40 per cent of all medical accounts.

The cold, business-like efficiency of Doctor Modern has failed to impress his clientele. The public demands kind words, soft assurances and honeyed expressions of comfort; in brief, the personal touch. They want the doctor with the goatee!

In conclusion Dr. Damrau says:

The remedy must come either from the doctor or the public. If the doctor is to take steps to correct the conditions that have led to the downfall of his prestige he must become less business-like and more human, learn less and more bla-bla, and cater his advice to the whims of grandma rather than to the inflexible dictates of pathology; in short, he must rehabilitate the goatee and all that goes with it.

However, all vital statistics, to say nothing of common sense, prove that the work performed by the doctor of today is vastly superior to that of his predecessor with the goatee. Therefore it is manifestly to the interest of the public to retain the cold, calculating, scientific medical man of today and reconcile themselves to the loss of his goatee.

The doctor of today is a scientific idealist. He thinks of cancer as an extremely interesting problem in pathology, where the layman can see only human affiction and disaster. Frequently the physician appears cold and unsympathetic. But his apparent lack of heart is only a mask that he wears for his own protection. A man who must perforce witness a dozen tragedies every day cannot take them all to heart; if he did, his calling would soon become impossible. After all, it is not mushy sentiment in the sick-room but cold, exact science that has increased the span of human life by more than ten years.

To my way of thinking, the public has been spoiled by the too easy-going toleration of the medical profession. The remedy must come from the public; otherwise, medicine will slip back into salesmanship. Appreciation of the modern doctor is much better than depreciation.—*N. Y. Times.*

Notes on Ephedrin

A Chinese herb called *ma huang* is the source of ephedrin. This active principle has been thoroughly investigated scientifically, both from the pharmacologic and clinical sides. These may be briefly noted.

Ephedrin and Blood Pressure. Intravenous injection in the circulation of the dog has a marked and prolonged increase in the blood pressure. In one instance 5 mg. caused an immediate rise of blood pressure from 75 to 200 m.m.

Ephedrin and the Heart. Coincident to increase of blood pressure there occurs in animals a definite cardiac acceleration. The pulse rate increased from 164 to 264 beats per minute in one animal. There was noted also definite augmentation in the strength of contractions and an increase in excursion of the heart. Over-dosage or repeated dosing exerted harmful effects. Extrasystoles and acute dilation occurred.

Ephedrin and Blood Vessels. In addition to cardiac acceleration and increase of blood pressure, vasoconstriction was marked, particularly in splanchnic circulation.

Ephedrin and Smooth Muscles. Smooth muscles relaxed only when ephedrin was given in relatively strong solutions as composed with adrenalin.

Chen and Schmidt observed that smooth muscle of the uterus was stimulated. The bronchus was relaxed.

Ephedrin and Salivary Flow. Chen and Schmidt reported that ephedrin increased the flow of saliva where atropine had been given.

Local Effect of Ephedrin on Muscular Membrane. Ephedrin like adrenalin, when locally applied, relaxed smooth muscle of the intestines and caused vasoconstriction when applied to mucous membrane. — *Virginia Medical Monthly.*

Income Tax Ruling

The compensation received by a medical director of a state or county hospital is no longer exempt from income taxes, under a ruling just announced by the Income Tax Department, according to M. L. Seidman, tax expert of Seidman and Seidman of New York City, certified public accountants.

"Heretofore," Mr. Seidman explained, "the law used to be that a medical director in the position mentioned need not pay any income taxes on his compensation since he was a state employee or the employee of a subdivision of a state, and the salaries of such employees were exempt from tax. Under the 1926 law, the further requirement was added that the employment be in connection with an essential governmental function. It is now held by the income tax department that operating a hospital is a proprietary rather than a governmental function, and hence the department concludes that the compensation of a medical director is subject to tax under the present law.

"The probabilities are," Mr. Seidman added, "that this ruling will be contested, for there is a serious doubt whether conducting a hospital is purely proprietary. The contention may be made that the state wishes to safeguard life as well as property, and maintaining a public hospital could therefore be regarded as an essential governmental function."

"Your Money's Worth"

No one group has done more to "debunk" the commercial practices of those dealing in the special merchandise of the group than has the medical profession. Furniture dealers are by no means agreed that it is in the public interest to let it be generally known that a table made of birchwood with a thin veneer of mahogany is not the "solid mahogany" of the advertisement; the gentlemen in "suits and cloaks" are far from agreeing that there is any moral defection in describing a garment of cotton and shoddy as "all-wool"; furriers still act on the principle that it is permissible to unload dyed muskrat on the public as "Hudson seal"; the manufacturers of a well known brand of soap admit privately that the slogan "99 and 44-100 per cent pure" is a slogan rather than a fact. But, for over twenty years, the organized medical profession has attempted to bring a minimum misrepresentation and deceit in the exploitation of medical products. Physicians, then, as a class, will probably be more interested than any other one group in the book recently published under the title "Your Money's Worth," by Stuart Chase and F. J. Schlink. Neither of the authors is a physician, but both of them have been trained to clear thinking and, what is equally evident from their book, to a lucid expression of facts. Mr. Chase, for some years on the staff of the Federal Trade Commission and at present a director of the Labor Bureau, Inc., is by profession a certified public accountant. Mr. Schlink, a mechanical engineer-physicist and an officer of the American Engineering Standards Committee, is fortified by an experience he had of some years on the staff of the National Bureau of Standards at Washington.

"Your Money's Worth" appeared originally as a series of magazine articles, under the title "Consumers in Wonderland." The book deals not so much with adulteration of products and deceptive advertising as outstanding evils of modern merchandising as with the wastefulness of selling what are practically identical articles under various brand names and with the absence of impartial information available to the public. In a few of the industrial fields, the public is protected in its purchase by standardization worked out by the industry itself, but the ground thus covered is pitiably small.

Medicine, however, has reason to feel proud of the fact that it was among the first, both in point of time and of importance, in establishing agencies whereby the public, through the profession, could be protected. In speaking of this phase of the problem, discussed by Messrs. Chase and Schlink, they say:

"Far and away the leader among the technical societies from the point of view we are considering is the American Medical Association. It is as fearless as it is explicit in the exposure of quackery. Its Council on Pharmacy and Chemistry and its Bureau of Investigation are continuously busy in the public interest. It has haled untold rascals before the bar of public opinion; broken up hundreds of shell games."

We unreservedly recommend "Your Money's Worth" as a book that is not only readable and teeming with facts, but as one that will appeal to the physician, both in his professional capacity and also as one of the great army of ultimate consumers of modern merchandise.—*J.A.M.A.*

McCoy's Health Advice

"When editors offer dangerous advice regarding the care of the human body to promote circulation of their newspapers they are trifling with human lives," declares *Hygeia* in an editorial comment on the so-called death columns of Frank McCoy, now appearing together with advertisements of his book in several metropolitan newspapers.

Any advertising department or editor who cared enough about truth to inquire could easily find out how far from scientifically established facts are most of the premises and advice in McCoy's book and columns. A careful analysis of some of the hogwash in the McCoy book appears in the current issue of *Hygeia.* Most reputable newspapers and periodicals have rejected advertisements of this book.

Bubonic Plague Death

A fatal case of bubonic plague, the first to occur in the United States in the past year and one-half, occurred in Clayton, Contra Costa County, Calif., on July 8, according to a report received by the United States Public Health Service, and made public on August 2.

The case was of a child five years of age, and is directly attributable to the handling of ground squirrels, some of which have been found to be positive for plague infection, it was stated at the Public Health Service. The family in which the death occurred, according to the report, had been trapping ground squirrels for food.

Since the occurrence of this case more than 5,000 ground squirrels in Contra Costa County have been killed, but all have been found negative of bubonic plague infection. The diagnosis of the case of bubonic plague was confirmed by inoculation of a guinea pig with a culture from the patient, with the result that the experimental animal acquired the disease.

The Assistant Surgeon General of the Public Health Service, Dr. C. C. Pierce, stated orally August 2 that an extensive survey is being made by health authorities of California, in cooperation with the Public Health Service and the Biological Survey of the Department of Agriculture, with a view of eradicating the disease. This campaign against plague infection, he said, has been waged for the past 27 years, and constitutes the killing of ground squirrtls, known purveyors of the infection.

In the past 15 years, Dr. Pierce said, about one case of bubonic plague each year has been reported from California. All of these cases, he said, were due to "accidental infection" from the handling of ground squirrels.

Describing the means employed in the eradication of these ground squirrels, Dr. Pierce said that one of the processes used involves the poisoning of grains such as barley and rye for the consumption of the rodents. These grains, he said, are soaked in strychnine, a deadly poison, and covered with saccharin, which removes the obnoxious sour taste of the strychnine. Another method employed in killing off the squirrels, he said, was that of pumping poisonous gas into the burrows in which the animals live.—*U. S. Daily.*

Cosmetic Legislation

Senator Royal S. Copeland of New York will introduce a bill in the next Congress to prohibit interstate commerce in cosmetics containing poisonous ingredients, according to a recent news story in the United State Daily. Although the exact language of the proposed measure has not yet been decided upon, it was understood that it would follow closely after a similar bill introduced at the last session of the New York state legislature.

Speaking of the bill, Senator Copeland is quoted by the United States Daily as follows:

"I am seeking and receiving a vast amount of information on this subject," he said. "The situation is very complicated and presents considerable difficulties in determining methods of enforcement. There is, of course, no desire to injure the business of reputable manufacturers and I anticipate these men will give hearty cooperation and valuable advice. We know, however, that many cosmetics now being manufactured and sold contain harmful substances and that situation should be remedied in so far as it is in the power of the Federal Government to control it through its power of regulating interstate commerce. Of course, we cannot touch the problem of intrastate trade in such articles."

The New York bill provides in part that no cosmetic preparation shall be sold or offered for sale unless the package has affixed to it a label stating that the formula from which it is made contains no lead mixture, aniline derivative, parophenylendiamin, bichloride of mercury, ammoniated silver nitrate, arsenic or caustic substances.

Legislation to abolish what he terms "diploma mills" in the District of Columbia will also be sought by Senator Copeland at the next session of Congress, the Senator announced orally on August 9.

At the same time the Senator made public the text of the bill which he will introduce

to carry out his plan, together with the text of another bill, designed to prevent similar institutions in the various States from using the mails to carry on their activities.

The bills, the Senator said, are to be practically identical with those which he introduced several years ago during the 68th Congress.

Post Graduate Assembly

The annual gathering of the Interstate Post Graduate Assembly of North America will be held in Kansas City, Mo., on October 17-20, inclusive, and plans are rapidly being rounded out for a successful meeting. The program has already been announced and will consist of more than 100 papers to be presented by the leading specialists of the world.

Among the well known doctors who will have a part on the program will be Dr. William B. Henry, professor of obstetrics and gyneocology of the University of Toronto, Canada, Dr. Otto J. Kauffman, professor of medicine of the University of Birmingham, England, Dr. R. P. Ranken Lyle of Durham, England, Dr. Ersilio Ferroni, professor of obstetrics and gyneocology of the University of Florence, Italy, and Dr. Sigmund Frankel, professor of experimental medicine of the Imperial Royal University of Vienna, Austria.

Some of the American doctors appearing on the program are Dr. Arthur Dean Bevan of Rush Medical College, Chicago, Ill., Dr. Frank Smithers, Northwestern University Medical School, Chicago, Ill., Dr. Alfred S. Warthin of the University of Michigan, Dr. Elliott P. Joslin of Harvard, Dr. Leroy Long of the University School of Medicine of Oklahoma, Dr. John J. Moorehead of the New York Post Graduate Medical School, Dr. Charles H. Mayo of Rochester, Minn., Dr. George W. Crile of Cleveland, and Dr. Gabriel Tucker of Philadelphia.

Dr. Jabez N. Jackson of Kansas City, president of the American Medical Association, will speak on the evening of October 19 on appendicitis.

Medicinal Whiskey

Representative Free (Republican) of San Jose, Calif., has received from the Indiana Anti-Saloon League a document it has published with a view to showing that whiskey has little value as medicine. It cites statements of a number of persons on the subject and says: "Instructed concerning the effects of alcohol on the human body, a generation arose that outlawed it as a beverage and feared it as a drug. An array of expert opinion is here presented condemning its use in medicine. These witnesses include leading surgeons, officers of state medical associations, medical school authorities, and heads of leading hospitals.

The League, in its letter to Representative Free, dated July 8, 1927, says:

"By request of Wayne B. Wheeler, I am enclosing you copy of a document which I recently had published dealing with the medicinal whiskey question. This document was gotten out by the Indiana Anti-Saloon League for two reasons. The first and immediate reason was a movement inaugurated by the attorney general of the state to have the governor ask the session of the legislature, which convenes in 1929, to provide for medicinal whiskey to be sold on physicians' prescriptions, etc., since Indiana is one of about 22 states that does not recognize whiskey as a medicine.

"The second reason which caused us to publish this pamphlet was the action of the recent meeting of the American Medical Association protesting against the limitation of the amount of liquor which a physician may prescribe for sickness under the provisions of the Volstead law."—*U. S. Daily.*

Kahn Test Is Adopted By State Laboratory

The West Virginia State Hygienic Laboratory announced recently the adoption of the new Kahn test for the diagnosis of syphilis to replace the Wasserman test which has been in use for several years. This will effect a great saving of time in reporting the findings on specimens sent to

the laboratory by doctors from all over the state. The Kahn test can be made daily as it requires only a short time, whereas the Wasserman test requires more elaborate apparatus and at least 24 hours before the results can be determined and could, therefore, be made only twice a week. In addition the Kahn test is said by some to be more reliable in the diagnosing of syphilitic infections.

In view of the fact that more than half of the 10,000 tests made by the laboratory last year were for the detection of syphilis, Dr. W. T. Henshaw, state health commissioner, decided to install the latest and most approved tests. Accordingly he sent Dr. C. E. Gabel, director of the laboratory, to Lansing, Mich., to study the new method under Dr. R. E. Kahn who developed the test which bears his name.

West Virginia, by the adoption of the Kahn test as the official one for the state, is following the lead of Michigan and one or two of the other progressive state health departments, as well as the U. S. Navy which adopted the Kahn test in December, 1925.

At present there are in the state 12 clinics for the treatment of indigent persons suffering from venereal infection with the prospect of three more clinics in the near future. In addition to the 11,212 cases treated in these clinics last year, hundreds of cases are under the care of private physicians. The venereal diseases which are next to measles in prevalency, require not only the first test to aid in the diagnosis, but repeated tests to determine the progress being made in treating the patient.

In the case of blood transfusions, which usually are emergency measures, the blood should be tested for any symptoms of syphilitic infection, and with the Kahn test this can be done in a very short time.

The thirty-eighth annual meeting of the Washington State Medical Association will be held at Tacoma, Wash., on August 29, 30, and 31. An attractive pamphlet announcing the state convention and carrying abstracts of many of the scientific papers to be presented has recently been mailed out.

Laryngeal Tuberculosis

A short while back, a more than ordinarily interested, studious and competent physician declared laryngeal tuberculosis to be an incurable disease. The expert 1927 opinion is quite the opposite. How general such a pessimistic opinion may be among the practicing physicians, we have no means of knowing. And perhaps, whatever there is of it is confined to the older men. They, it must be admitted, had far more reason for pessimism throughout the field of tuberculosis therapy than do the younger physicians. In any case, it seems justifiable publicly to correct the error.

Writing on the treatment of laryngeal tuberculosis, C. D. Parfitt of Gravenhurst, Ontario, says: "Laryngeal tuberculosis has been one of the less dangerous complications and the one most amenable to treatment. The lesion often becomes arrested or cured before the patient has recovered from the pulmonary disease, while even those with advanced laryngeal disease and bad prognosis may benefit greatly by active interference. The laryngeal complication has rarely proven fatal and then only in fulminant cases, or in those with an otherwise hopeless prognosis."

This is not far from the general concensus of opinion of the tuberculosis specialists and of the laryngologists who do not neglect the general sanatorium regimen while treating the local disease.—*Wisconsin Med. Journal.*

Dr. Welton Appointed

Friends of Dr. William A. Welton of Terra Alta were recently pleased to learn of his appointment by Governor Howard M. Gore as superintendent of the Fairmont State hospital No. 3 at Fairmont. Dr. Welton assumed his new duties on September 1, succeeding Dr. E. P. Sheppard, who resigned some time ago to become chief surgeon of a Kentucky hospital.

Dr. Welton is a very active member of the West Virginia State Medical Association and has served during the past year as president of the Preston County society. He was recently married to Miss Eleanor Miller of Terra Alta.

Bichloride Poisoning

The successful treatment of acute bichloride of mercury poisoning is reported by Manuel D. Rojas in the fifteenth annual report of the medical department of the United Fruit Company. In one case the patient had taken 22 grains of the bichloride and in another case 2 tablets, amount not stated, had been taken. Symptoms very severe in both cases. They were treated with sodium thiosulphate. Of this drug .50 gm. was given intravenously and 1 gm. dissolved in 100 c.c. of iced milk by mouth. This was repeated every day. Morphine was administered to relieve pain when necessary. Both patients recovered completely. — *Kansas Medical Journal.*

Grafton's Typhoid Epidemic

An interesting abstract of a report of the typhoid epidemic in Grafton, W. Va., during the winter of 1926-27 has been published in the Public Health Reports of the United States Public Health Service, issue of July 22. The abstract says in part:

"In December, 1926, and January, 1927, Grafton, W. Va., suffered from a typhoid fever epidemic, due to polluted drinking water. There were more than 150 cases, resulting in 25 deaths. Grafton procures its drinking water from the Tygarts Valley River, and for five years the West Virginia State Health Department has been urging filtration of the water. Little success has been met and it even was necessary to have recourse to the courts to obtain the installation of a chlorinator.

Investigation of this epidemic disclosed that chlorination had not been continuous nor at a high enough rate during the month preceding. As to the cause of the specific pollution of the river it was found that five cases of typhoid fever had occurred, in the late fall of 1926, 20 miles up the river, and that the stools of these patients had been thrown on the banks of a small stream leading to the river. Rainfall records showed that heavy rains had occurred during the second and third weeks in November, the period preceding the time of development of the greatest number of typhoid cases in Grafton by two or three weeks. The five cases up the river were virulent ones, and the disposal of the stools on the bank of the stream leading to the river probably caused the disastrous epidemic in Grafton.

As an outcome of this epidemic immediate steps were taken to retain a competent engineer to draw plans for a modern filtration plant and the West Virginia Legislature was asked to pass a special emergency bill allowing a special levy to be made by the Grafton authorities to finance a construction program.

Hospital Convention

The twenty-ninth annual convention of the American Hospital Association will be held at Minneapolis, Minn., on October 10-14, inclusive, according to a recent bulletin sent out by Dr. William H. Walsh, executive secretary. The meeting is expected to be the largest in the history of the association with the most complete technical exhibit ever shown.

In connection with the Hospital Association convention will be held the annual meetings of the American Association of Hospital Social Workers, the American Occupational Therapy Association, the Children's Hospital Association of America and the Hospital Dietetic Council.

Snyder-Wright

An event of interest was the marriage of Miss Myra Snyder, daughter of Mrs. Bessie Snyder of Martinsburg, to Dr. Chauncey B. Wright, brother of Mrs. W. S. Wylie of Huntington, which took place Tuesday, July 12, in Martinsburg.

Mrs. Wright attended the Martinsburg schools and Goucher college, in Baltimore, where she graduated last year. Dr. Wright has completed his internship at the French hospital in New York, and is a graduate of Cornell and Johns Hopkins universities.

The couple will reside in Huntington.

Fake Radium Jars May Cause Dangerous Delay

Quackery is always versatile and usually plausible, the quack taking advantage of the little, but dangerous, knowledge possessed by the public on things scientific. When radium was discovered it was not long before enterprising medical fakers began claiming that their products contained radium, declares *Hygeia.*

The prevailing style of radioactivity is that of selling water jars for the alleged purpose of producing water in which radium emanation has been dissolved. Of course, there are on the market some radium emanation devices sold for professional use, which produce an amount of emanation that is therapeutically potent. However, a large number of jars are sold to the public for the self-administration of emanation solutions that have no more value for therapeutic purposes than the water from the Potomac river or Lake Michigan.

Radium and radium emanation for therapeutic purposes are equally as potent for harm as for good. If these emanation generators were made to produce a therapeutically valuable amount of emanation, they might be very dangerous when used indiscriminately. Fortunately, this is not the case and the only harm done by using them is the wasting of vitally valuable time. It is as futile to try to treat the simpler ailments with water from these fake radium emanation jars as it would be to treat cancer with the radiolite dial of an Ingersoll watch.

Bible and Microscope

"If the Bible and the microscope do not agree," declared the Rev. John D. Mell, of Georgia, "the microscope is wrong. I will believe the Bible if it makes every laboratory in the world a liar." Said the Rev. Marion McH. Hull, another Georgia Fundamentalist, "If scientists want to test the truth of any theory they should search the Scriptures, and if the theory and the Bible do not conform, the theory should be rejected." But perhaps an even more illuminating insight into the psychopathology of Fundamentalism is afforded by an excerpt from a speech delivered in the Georgia legislature a few years ago, when a bill was defeated which proposed to allow counties, school districts and municipalities to tax themselves to establish libraries. Said the Hon. Hal Kimberly, eminent member from Laurins county: "These three (Bible, hymn book and almanac) are enough to any one. Read the Bible. It teaches you how to act. Read the hymn books. It contains the finest poetry ever written. Read the almanac. It shows you how to figure out what the weather will be. There isn't another book that is necessary for any one to read, and therefore I am opposed to all libraries."—*N. Y. Times.*

164,002 Physicians Listed In New Medical Directory

For more than twenty years the American Medical Association has been publishing a directory of the medical profession. Ten editions have appeared, the last one (1927) being just off the press.

The first edition (1906) contained 128,171 names of physicians in the United States, its dependencies and Canada. The new Tenth Edition includes 164,002 names. There is an increase of 2,644 over the previous edition. If the directory were merely a list of names and addresses of physicians it would not have great significance. That information is valuable, but of far greater value is the fact that the directory gives proof of the right of each physician listed to practice medicine — namely, time and place of graduation and year of license. In addition, society membership, specialty and office hours are included. Capital letters indicate those who are members of their county medical society, and a special symbol follows the names of those who are Fellows of the American Medical Association.

The information concerning hospitals and sanitariums of the United States is another valuable and extensive feature. Descriptive data appears following the names of 7,816 hospitals and sanitariums such as type of

patients handled, capacity, and name of superintendent or director.

The list of physicians in each state is preceded by a digest of the laws governing medical practice in that state; members of licensing board; state board of health; names of city, county and district health officers; officers of constituent state associations and component county and district medical societies. The book, in short, is one vast source of reliable data concerning the personnel of the medical profession and the institutions and activities closely related to it. It contains 2,575 pages and is sold for $15.00. Published by the American Medical Association, 535 North Dearborn Street, Chicago.

Tells How Bone Mill Aids the Hunchback

The hunchback is one of the many sufferers to whom aseptic plastic surgery has proved a boon, declares Dr. Fred H. Albee in the current issue of *Hygeia.* By means of the bone mill it is possible to insert a bone graft into the substance of the spine or by the Hibbs technic to fuse the vertebrae so that absolute loss of movement takes place without compressing the chest or interfering with respiration. This is of especial importance because bony tissue affected with tuberculosis heals so slowly and must be kept in position by plaster casts and braces for so long a time.

The bone mill also may be used in restoring extensive loss of bone resulting from war injuries or industrial accidents. The length of the graft is only limited by the length of the bone from which it is removed.

Aseptic surgery has made possible the transplantation of muscles and tendons. This has brought most remarkable results in rehabilitation of patients recovering from infantile paralysis. Muscle training must complete the work of the surgeon and should be carried out under his supervision.

Another accomplishment from the point of view of the patient's happiness, comfort and future efficiency is the discovery of light substances such as duraluminum for braces.

New Milk Modifier

Horlick's Milk Modifier, a new product made by the Horlick's Malted Milk Corporation, Racine, Wis., is now being introduced to the medical profession. This maltose and dextrin product, which is derived from malted grains, was first announced at the annual meeting of the American Medical Association in Washington, D. C., in June. Since that time it has been presented to convention gatherings in other parts of the country, and the Horlick representatives are now calling on individual members of the profession.

In the June 18th issue of the Journal of the American Medical Association, under the heading of New and Non-official Remedies the acceptance of the Horlick Milk Modifier was announced by the American Medical Association. The product differs from the malt sugars in that it incorporates soluble and readily assimilable protein and mineral salts from the grains.

Samples of the new product, literature concerning its use, prescription blanks and file cards giving methods of preparation are available for members of the medical profession and will be sent upon request.

S. M. A. Convention

The first bulletin on the twenty-first annual meeting of the Southern Medical Association, which will be held at Memphis, Tenn., on November 14-17 inclusive, has just been sent out by the officials of the organization. The convention will be divided into two parts, two days for clinical sessions and two days for section meetings.

The city of Memphis has one of the largest and most modern convention auditoriums in the south and the greater part of the convention activities will be held under one roof. The same general plan of the previous meetings of the Southern Medical Association will be carried out.

A large number of members of the West Virginia State Medical Association are already making their plans to attend the S. M. A. meeting and a record attendance is expected.

Surgeons to Gather

The American College of Surgeons will hold the seventeenth Clinical Congress in Detroit, October 3-7. Headquarters will be at the Book-Cadillac and Statler hotels, and the meetings will be held at the Statler hotel, and Orchestra hall. The Hospital Standardization Conference will extend from Monday morning to Thursday afternoon and will include a discussion of hospital and nursing problems and hospital demonstrations. Monday evening's program will include an address of welcome by the local chairman, the address of the retiring president, the inaugural address of the new president, and the John B. Murphy oration.

Clinics in general surgery will be held in the Detroit hospitals each morning from Tuesday to Friday, and in eye, ear, nose and throat work the same afternoons. Clinics will also be held at University Hospital, Ann Arbor, Tuesday to Thursday. On Tuesday and Wednesday mornings and afternoons, and on Thursday morning, clinical demonstrations will be held at the Statler hotel (mornings) and Orchestra hall (afternoons). On Thursday afternoon the annual meeting of the Governors and Fellows will be followed by a cancer symposium. On Friday afternoon there will be a symposium on traumatic surgery, to be participated in by leaders in industry, labor, indemnity organizations, and the medical profession. On Tuesday evening the program will take the form of a celebration of the Lister Centennial. On Thursday evening there will be a large Community Health Meeting in the Masonic Temple, and on Friday evening the annual Convocation of the College.

Other outstanding features will be the exhibits. In addition to the commercial exhibits there will be a replica of the Lister exhibit at the Wellcome Museum of Natural History, London, including Lister's operating rooms and hospital wards. The Departments of Hospital Activities, of Literary Research, and of Clinical Research of the College will also present exhibits.

Among the foreign guests will be Sir John Bland Sutton, England; J. M. Munro Kerr, Scotland; Gordon Craig, Australia; Gustaf E. Essen-Moller, Sweden; S. A. Gammeltoft, Denmark. The retiring President is W. W. Chipman, Montreal, and the President to be inaugurated, George David Stewart, New York. The Lister oration will be delivered by W. W. Keen, Philadelphia. The Chairman of the Detroit Committee on Arrangements is Alexander W. Blain.

Frank McCoy's "Cures"

In general the health columns carried by the newspapers during the last decade or so have been and are sane and worth-while contributions to the public's knowledge, declares Dr. Arthur J. Cramp, director of the bureau of investigation of the American Medical Association, in the current issue of *Hygeia.*

However, false prophets have also arisen, among them one Frank McCoy of California, who writes in the columns of some newspapers under the title of "Doctor" although he is not a physician.

His book details absurd statements of "cures," such as that of a man who had been "wholly deaf for about ten years," who went on a fast and in eighteen days could hear a watch tick eighteen inches from his ear! In his column Mr. McCoy has declared that cancer of the lip may be easily cured by fasting for ten days of two weeks.

The harm that such false beacons do is both positive and negative. "It is positive in that it gives the nontechnically trained public a large amount of misinformation; it is negative in the harm that may follow the postponing of proper treatment," says Dr. Cramp.

Koch Cancer Foundation

The second annual convention of the Koch Cancer Foundation will be held at the Congress hotel, Chicago, Ill., on September 22 and 23, 1927. The meeting on the afternoon of the second day will consist of a joint session with the American Association for Medico-Physical Research. The complete program of the papers to be presented at the Foundation's meeting will appear in the September number of the *Bulletin.*

Medicine and Movies

Advancement of medical science is being greatly stimulated by the development of amateur motion picture making, it is declared by Dr. Herman Goodman, of the staffs of the New York Skin and Cancer and West Side Hospitals, in an article entitled "Saving Lives with Celluloid" in Amateur Movie Makers, the official organ of the Amateur Cinema League.

"The values of motion pictures in medicine and surgery have long been realized," he stated, "but these possibilities have been infinitely multiplied by widespread use of amateur motion picture apparatus by physicians themselves. This is because the making of such films requires accurate knowledge of the technique of the medical profession, as well as knowledge of motion picture making. But, whereas it has been out of the question to expect professional cameramen to learn the medical profession, which requires a lifetime of study, it has been quite practical for physicians and surgeons to master the simpler problems of motion picture making. Therefore medical men as motion picture amateurs have extended the field of medical motion picture making from a few expensively equipped laboratories to include any doctor's office, any clinic, and any hospital.

"By their activities will be recorded the experimentation through which will come the advances in the medical field. And their film records will spread new knowledge and new skill with a rapidity hitherto undreamed. Their films will come to the schools and colleges. Medical students will no longer have to depend on imagination to fill out the word pictures of their teachers. Through these motion pictures every seat in the clinics will become a front seat, by the magic of the camera's eye placing every student at the very elbow of the operating surgeon. With marvelous clarity will unfold the technic, the reaction of the patient, the sorcery of the operator's hands, all the links in the chain of successful routing of disease and death.

"The possibilities of amateur motion pictures in medicine and surgery are unlimited. I confidently look to the amateur movie makers in these fields, so vital to humanity, to realize these opportunities in full, and that in future medicine and surgery will progress hand in hand with amateur rinematography."

Tri-State Meeting

Dr. Roger H. Bennett of New York City, Dr. Arthur R. Elliott of Chicago, and Dr. Walter T. Dannreuther of New York City will be the three principal speakers at the next meeting of the Central Tri-State Medical Society, to be held in Huntington on September 29, it was recently announced by officials of the organization. The doctors to discuss the three papers have not yet been selected.

Dr. Bennett will talk on "Current Pediatric Topics;" Dr. Elliott will read a paper on "Coronary Arterial Disease and Coronary Thrombosis;" and Dr. Dannreuther's paper will be on "The Office Treatment of Gynecological Patients." The program committee of the Tri-State association feels that it has made up one of the best programs ever offered by the society and a record attendance is expected.

The meeting will get under way promptly at 2 o'clock on the afternoon of Thursday, September 29, at the Hotel Pritchard in Huntington, according to Dr. F. O. Marple of Huntington, secretary of the Tri-State society. A banquet will be served at the hotel between the afternoon and evening sessions.

Idaho Convention

The thirty-fifth annual meeting of the Idaho State Medical Association and the Public Health League of Idaho will be held at Twin Falls on August 29, 30, 31, 1927, according to a recent bulletin issued by the society.

Out-of-state speakers for the Idaho gathering will be Dr. W. C. Finnoff of Denver, Col., Dr. J. Tate Mason of Seattle, Wash., Dr. C.F. Kember of Denver, Col., Dr. I.H. Moore of Seattle, Dr. W. Scott Keyting of Salt Lake City, Dr. Joseph Aspray of Spokane, Wash., and Dr. Barnet E. Bonar of Salt Lake City.

Central West Virginia

The Central West Virginia Medical Society met in the reception room of the Oakland hotel at Webster Springs, August 6, 1927, at 7 p. m., with about one-fourth of the members present. This attendance was considered very good on account of the condition of the roads, and the widespread territory over which the Central West Virginia Society has jurisdiction.

Dr. J. B. Dodrill acted as chairman in the absence of Dr. C. K. Fisher, the president.

After disposing of the business pending, on the suggestion of Dr. Walker of Adrian, a committee was named by the chairman to draw up resolutions on the death of Dr. J. E. Hyer.

Dr. J. A. Rusmisell of Buckhannon, discussed "Conditions Simulating Trench Mouth."

Miss Frances Furbee, county health nurse of Webster county, spoke on Health Unit Work.

A temporary Central West Virginia Woman's Auxiliary was effected, to be perfected later, probably at the meeting of the Central West Virginia Society at Buckhannon in October. The officers are, Mrs. J. B. Dodrill of Webster Springs, president, and Mrs. J. A. Rusmisell of Buckhannon, secretary.—*S. S. Hall, M. D., Secretary.*

Physicians' Year Book

The 1927-28 year book of the American College of Physicians will be ready for distribution about September 1, 1927, according to an announcement in a recent bulletin issued by the college. It will be the first year book and directory published since the 1923-1924 edition, and much of the material that appeared in the former volume has been revised, enlarged and corrected.

In connection with the publication of the new year book, it was stated that a few hundred copies over and above the actual paid-up membership of the college would be printed and that copies will be reserved as orders are received. The year book sells for $2.00 to non-members.

Our New Advertisers

The management of the *West Virginia Medical Journal* is pleased to welcome six new advertisers, all of them starting under 12-time contracts with the September issue. Among the newcomers is the Berkeley Springs Hotel Corporation, a West Virginia concern that is contemplating the erection of a million-dollar hotel at the famous mineral springs in the Eastern Panhandle.

The other new advertisers are the McGuire Clinic of St. Luke's Hospital, Richmond, Va., the Ambler Heights Sanitarium of Asheville, N. C., the W. S. Wylie and W. H. Belsches drug stores of Charleston and the Stout Drug Company of Parkersburg.

"Hot Weather" Measles

A study of case reports from 10 states during the five-year period from 1922-1926, according to the August release of the United States Public Health Reports, shows that, although measles is a "cold-weather" disease from the standpoint of the relative danger of dying from it when once contracted, it is decidedly a "hot-weather" disease. Without exception these reports show that the peak of measles prevalence occurred during the late winter and spring months, and that with the coming of warm weather the case incidence dropped very sharply and continued the decline to a low point, which was reached in September.

On the other hand, the case fatality rate was highest in the summer, the records uniformly showing that a greater proportion of measles cases terminated fatally during August and September than at any other time of year.

It is worthy of emphasis, according to the public health report, that regardless of age or season when the disease is contracted, the period of convalescence is the most important stage of measles. It is when the child is recovering that he is the weakest from the effects of the disease, and it is then that dangerous complications are most likely to develop.

Doubtful Remedy

The discovery of a germ reputed to be the cause of rheumatism has been reported by a Philadelphia physician, who claims that a serum made by injecting the germ into a horse has greatly helped sufferers from the disease. Although this is encouraging, one must be unusually cautious before accepting the new discovery, warns *Hygeia.*

Past records show that similar discoveries have not been all that they at first appeared to be. The greatest critics of new medical discoveries are those within the medical profession itself, who realize the importance of absolute fact as the basis of science. The general public is safe in using their judgment as a guide for the acceptance of new remedies.

J. Randolph Harrell

A complete expose of the Harrell Associated Chemists of 322 West Washington street, Chicago, a mail order gland cure fraud that was advertised extensively in West Virginia last spring, was published in the August 20 issue of the *Journal* of the American Medical Association. The Harrell Associated Chemists first came to the attention of the committee on public relations of the West Virginia State Medical Association on April 7, 1927, when a full page advertisement of the alleged "gland treatment" appeared in one of the Charleston papers.

On May 4, 1927, the West Virginia Medical Association received a communication from the bureau of investigation of the American Medical Association which read in part, "We have recently learned that the actual individual back of the Harrell concern is one Lewis J. Ruskin, whose mail-order "gland cure," run under the names of the Lewis Laboratories and Druesen-Kraft Laboratories, was declared fraudulent by the government. It seems, however, that Ruskin for some time evaded the fraud order by continuing his business under a new name, known as the Walton Company at 322 West Washington Street, Chicago, and that is the same address from which the Harrell outfit is now being operated.

"As the Harrell advertising is very similar to that formerly put out under the Lewis-Druesen-Kraft-Walton names, doubtless the treatment is, likewise, a similar piece of 'gland cure' fakery."

The *Journal of the American Medical Association* states in part, "J. Randolph Harrell describes himself as a Virginian, whose parents were born in the South. Advertising blah of the human interest type plays up Harrell, who is spoken of as 'professor' and advertised as an 'authority on physiological chemistry' and a 'noted Virginia chemist' who has given his 'life's work to the relief of pain-racked humanity.' Harrell writes that he is a graduate of 'two leading colleges' (names of colleges not given) and started his 'career as a research chemist in a Detroit hospital.' The advertising also states that Harrell is 'known personally to a great many physicians and scientists from coast to coast'."

"The facts are," continues the article in the *A. M. A. Journal,* "that Harrell is unknown to reputable medicine, pharmacy or chemistry. He is not 'known as an authority on physiological chemistry' to any except the quacks with whom he associates. Yet he has the effrontery of this kind to say: 'My reputation is your bond'."

"Those who write for the treatment receive six gelatine globules, each holding a small amount of an oily substance, four tablets and four pink capsules. When tested in the A. M. A. laboratory, the oil in the globules was found to respond to the test for salicylates and to have the odor of oil of wintergreen (methyl salicylate); the tablets responded to tests for cinchophen, while the capsules, it seems, contained baking soda colored pink."

The well known surgical supply house of A. S. Aloe Company in St. Louis has been crowded out of their contracted quarters at 513 Olive street and are now located in the new Aloe Surgical building at 1819-23 Olive street. The optical store will remain in the old location.

WOMAN'S AUXILIARY

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We are very much indebted to the *West Virginia Medical Journal* for the generous offer of a page in the Journal each month, and are sure that it will mean a great advance in the work of the auxiliary, making it possible for the doctors' families throughout the state to become better acquainted with the work and with each other. The Woman's Auxiliary of the Medical Association was organized by Mrs. S. C. Red of Houston, Texas. The purpose at first was mostly social, but the possibilities in doing good in an educational way was so apparent that at the American Medical Association meeting in St. Louis in 1922 it became permanently established. Twenty-nine states have already been organized, four more are in the process of organization with a membership of six thousand. West Virginia was the twenty-first state to become organized and has a membership of two hundred at the present time.

We are not a club but an organization. Everyone of us is a member of one or more social, literary or civic clubs, all marvelous instruments through which we might broadcast our gospel of health. One of the objectives this year is to urge every woman's club and parent-teachers' association in the state to provide at least one health program during the year, emphasizing the importance of annual physical examinations of the members and their households. Another objective this year is to double our subscriptions to Hygeia, but our major objective is to get the state better organized. At present we only have seven auxiliaries, when we should have twenty-six. We are far behind the other states in organization work. Mrs. C. M. Scott of Bluefield, has been appointed state organizer. Write to her for the necessary information and literature on the subject.

We are very fortunate in securing Mrs. T. M. Barber as Editor of our auxiliary page, and I want to urge you to cooperate with her and her editorial staff in making this page a success.

MRS. B. S. PRESTON, *President.*

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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EXPERIMENTS ON THE SINO-AURICULAR NODE*

By MILTON C. BORMAN, M.S., M.D.
Montgomery, W. Va.

MAN is universally impressed by the remarkable mechanism of the human body. Its adjustments, transitions, and adaptations whether immediate or requiring ten thousand years are equally marvelous. When we consider the shifting and change in morphology and function of certain portions of our bodies, we need the perspective and orientation of anthropological studies. The almost instantaneous adaptation of respiration to the lack of oxygen or increase in carbon dioxide is as amazing as the gradual changes in the shape of the hands, head, or feet in response to different needs which act through the ages like the river stretching its cramped margins through a rocky gorge.

The human heart is still figuratively spoken of as the seat of human affection. Legally, its action is synonymous with life, itself. Scientifically, the human heart is among the wonders of the universe. An invaluable talisman, it has been hidden among the deepest recesses of the body, tied up in a sac, and moored firmly to the bony cavern which so jealously guards its secrets and activities.

Beginning as a bent single tube in fish, the heart becomes a three-chambered organ pumping one-half pure blood in amphibia and and most reptilia. In birds and mammals there are four compartments, the most specialized cardiac development we have found. The human heart passes through

FIG. 1. Developmnet of the primitive cardiac tub at the end of the third, fourth and fifth weeks, respectively. (After Foldt.)

similar stages in its embryonic development (Fig. 1). In the mid-line of the early embryo, two endothelial tubules surrounded by mesoderm by a process of blending form the primitive cardiac tube, which by the processes of bulging, constricting, and further differentiation at the end of the third week

* Presented to the section on internal medicine, West Virginia State Medical Association meeting, White Sulphur Springs, W. Va., June 22, 1927.

has become a two-chambered organ. At the end of the fourth and fifth weeks, respectively, a third and fourth chamber have formed.

At the junction of the superior vena cava and the right auricle in mammalian hearts

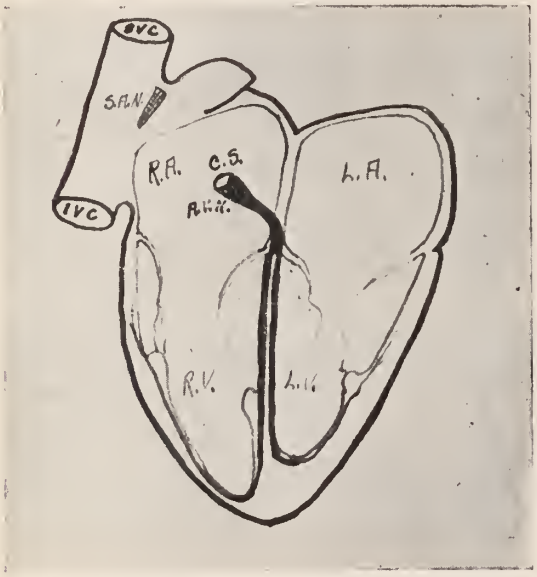

FIG. 2. Diagram showing the structures concerned in the initiation and conduction of the cardiac impulse. SVC (super vena vaca), iVC (inferior vena cava), R.A. (right auricle), L.A. (left auricle), C.S. (coronary sinus), A.V.N. (auricular-ventricular node), R.V. (right ventrcle), L.V. (left ventricle).

there is a ridge of muscle known as the crista terminalis in the substance of which the sino-auricular node is hidden, (Fig. 2). Based upon purely experimental evidence, we believe that cardiac impulses are regularly discharged from this structure, which impulses in some manner reach a further specialized structure between the auricles and ventricles, the auriculo-ventricular node, whence they travel through the bundle of His, and its branches to the ventricular muscle and produce contraction. It is natural that attention should be focused upon the sino-auricular node, if we accept the evidence that this tissue possesses the remarkable function of initiating and discharging impulses at a rate of seventy per minute in perfect rhythm, year after year.

Essentially muscular, we note that the sino-auricular node is made up of very slender closely woven interlacing fibers with numerous nuclei. The nodal fibers stain a light tan with Van Geison-hemotoxylin stains, whereas the surrounding auricular musculature is a golden brown or yellow. The lack of separation into bundles of muscle fibers in the node is quite distince. Nerve ganglia are occasionally seen, as well as a single or group of nutrient vessels, landmarks in finding the node. Chemically, the node is of higher glycogen content than the surrounding muscle.

In our study of the initiatory mechanism, many methods have been used to destroy the node, among which have been chemical, thermal, ligation, and excision. Six years ago upon the suggestion of Eyster and Meek, I attempted to determine by ligation and surgical excision the amount of the node that could be destroyed in a series of 14 dogs, and still have that structure maintain its pacemaking function.

Under sterile precautions with intermittent air-ether intratracheal insufflation, the right chest was opened (Fig. 3) as well as the pericardial sac. The pulsating heart was swung on its axis by a structure catching the fat in the a-v groove and passing out of the

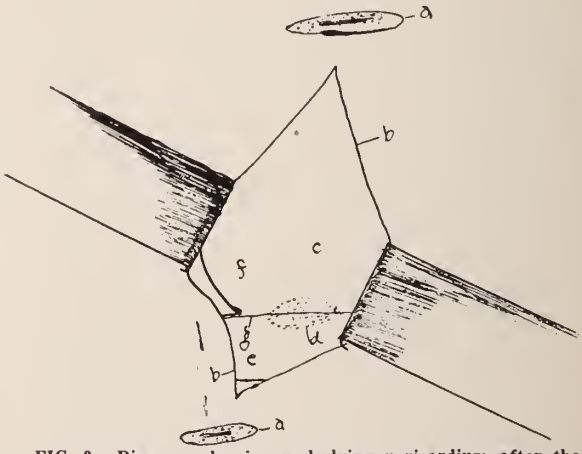

FIG. 3. Diagram showing underlying pericardium after the pleura is incised. a (ends of resected rib), b (pleura), c (right auricle), d (relative site of sino-auricular node), e (superior vena cava), f (pericardium covering right heart), g (right phrenic nerve).

anterior chest near the sternum. The site of the node normally on the right posterior aspect of the heart was thus thrown into full view, (Fig. 4). Overlapping mattress sutures were lain, (Fig. 5), drawn taught, and tied, (Fig. 6). The everted tissue

containing the node was thus excised with very little bleeding.

In these experiments the following observations were made:

1. The interval between auricular and ventricular systoles, or, in other words, the time required for the impulse to pass from the sino-auricular node to the ventricular muscle was increased in 12 out of 14 animals.

2. In three animals a new type of rhythm developed in which the auricular and ventricular systoles were practically simultaneous: the so-called "nodal rhythm."

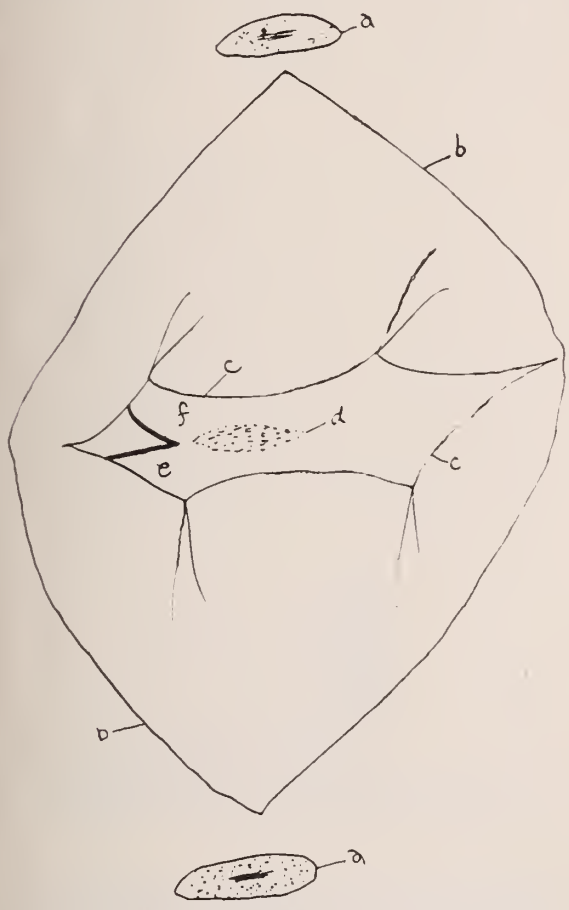

FIG. 4. Diagram illustrating site of sino-auricular node after incision of the pericardium. (Lettering same as in Fig. 3).

3. In three animals, 9 to 10 per cent of the nodal tissue was sufficient to originate the impulse, illustrating the remarkable power of adaptability and reserve of that vital structure.

While seeking for a more effective method of destroying the nodal tissue, Dr. J. E. Sweet, one of our visiting speakers, then of the University of Pennsylvania, suggested to me the use of radium emanation. This method was successfully used in another series of 14 dogs. The radium emanation was placed in glass tubes about 1 cm. in length which were inserted immediately beneath the epicardium over the site of the sino-auricular node.

Among the observations the following were noted:

1. The sino-auricular node is apparently more sensitive to the action of radium emanation than the surrounding tissue. This further suggests that the node is more primitive embryologically for it has been frequently observed that primitive tissues are subject to greater changes following radium emanation than are more specialized structures.

2. The elastic coats of the arteries displayed great resistance toward the emanation rays.

3. The pathological changes noted were fatty metamorphosis, karyorhexis, necrosis, and scar formation. The action of the emanation upon the nodal cells and nuclei was suggestively primary as well as secondary to circulatory disturbances.

4. The anatomical site of the node may be more accurately described as being in close relation to the cavo-auricular junction, the nutrient vessels, and the crista terminalis in the substance of which structure I have always found the node practically contiguous to the superior vena cava, lying just beneath the epicardium.

5. The head of each node tapered off cephalically into a very small bundle of fibres instead of being typically club-shaped as has been previously described by other writers.

Criticism in the past of experimental destruction of the sino-auricular node has been based upon the belief that all such experiments were too sudden, artificial, and extensive to be conclusive. The radium emanation method answers these objections. The destruction is limited; the radon is slow in action, requiring 33 days, during which time its action is continuous. It approaches,

therefore, conditions which might be observed clinically.

Functionally, the following conclusions and deductions were drawn from the above experiments:

1. Complete histological destruction of the sino-auricular node may not always be detected in the electrocardiogram.

2. The rhythm subsequent to complete histological destruction may functionally simulate a normal sinus rhythm.

3. When part of the sino-auricular node has been gradually destroyed by radium

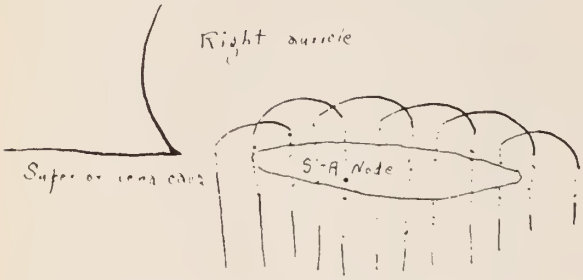

FIG. 5. Diagram illustrating the laying of sutures beneath the sino-auricular node preparatory to its excision.

emanation the cardiac impulse may be initiated by sinus tissue too minute to be detected histologically.

4. If that destruction is complete the possibility of the intact surrounding cardiac tissue initiating the impulse must be considered.

5. The following normal electrocardiographic values were noted:

a. Normal p-r interval in dogs: from 0.07 to 0.13 second.

b. Individual variance of p-r interval in normal dogs in a single tracing may be 0.03 of a second.

c. Cardiac rate normally varies from 70 to 130 per minute.

What may be the clinical application of such knowledge? The value of an exact description of an anatomical structure needs no elaboration. It is further obviously of value to be able to recognize alterations in an electrocardiogram, and in these days of more accurate diagnosis to know upon what pathological and anatomical changes such alterations depend. The action of digitalis depends partly upon its stimulating vagal effect thereby depressing the rate of cardiac impulse initiation in the sino-auricular node. The action of digitalis directly upon the cardiac musculature is not generally accepted. If we had an experimental method of satisfactory ablation of the sino-auricular node, new avenues of research would be opened in which the so-called direct effect of digitalis upon the myocardium might be studied. I believe the method employed herein with radium emanation will lend itself upon further perfection to this latter problem. Hence, the practical value to be derived from purely scientific studies.

The extension of the use of radium emanation to the purpose of these experiments is of value *per se.* The simple principle of a point of highest automaticity as pronounced by cardiologists led Alvarez to make application of the same principle to the gastro-intestinal tract resulting finally in his pronouncement of the gradient theory which has proved itself of practical value in the treatment of gastro-intestinal disease. The application of the reflex arc principle as understood by the late Sir James McKenzie ren-

FIG. 6. The sutures lain in Fig. 5 have been tied producing the eversion or puckering of tissue in the substance of which the sino-auricular node lay.

dered simple many of the complex phenomena associated with disease and led to the establishment finally of St. Andrews Institute of Research. McKenzie, the "beloved physician," had become a practical as well as scientific worker.

It is short-sighted not to realize the practical importance of scientific study. The research worker does not always begin with a definite plan. His ideas are more frequently

in a state of flux. Often in the depths of a problem he makes a discovery opening thereby an entirely new realm. The recent discovery of an organism in a human blood culture nine days after seeding, and another twenty-one days thereafter, although most laboratories throw out such cultures on the fourth or fifth day, enabled Dr. James C. Small to announce the discovery of what he considers to be the organism specifically responsible for the rheumatic chain of infections.

The battle front in our war upon disease is gradually being pushed forward. Only through the united effort of the physician, surgeon, research and laboratory worker shall we emerge victorious.

SURGICAL TREATMENT OF INFANTILE PARALYSIS*

By R. TUNSTALL TAYLOR, A.B., M.D,, F.A.C.S.
Baltimore, Md.

AS INFANTILE PARALYSIS is almost a national scourge upon the children of America, it has been deemed wise to choose this subject to present to you.

Twenty-five years ago, before the Anti-Tuberculosis Crusade had borne fruit, 50 per cent of admissions into children's hospitals presented some form of spinal or joint tuberculosis. Happily, due to intensive instructions in the prevention, care and treatment of pulmonary tuberculosis, the prevalence of acquired human or bovine bone and joint tuberculosis in the offspring, has been materially lessened. Now, however, on going through the wards of our children's hospitals one finds a larger percentage of infantile paralysis than formerly, at least 25 to even 50 percent, and more prevalent than is tuberculosis, and alas! we are fairly helpless in our knowledge of real preventive measures. Flexner's conclusion that a filtrable virus from the nasal mucous membrane of the acutely sick would reproduce the disease in monkeys, through the cribriform plate of the ethmoid and Osgood's demonstration that a virulent excretion similarly, from the naso-pharynx, of those who had been in contact with a recently paralyzed patient, as long as four months previously, reproduced the disease. These observations do not help matters materially in preventing this disease and certainly not in stamping it out, as a very large number of children are probably exposed to the abortive type of the disease or have immunity which escape recognition and naso-pharyngeal symptoms are the exception.

The intermediate host, whether insect, domestic animal or human being on food, is still a matter of guess work and so is the question of individual susceptibility, but it is a fact that as a rule but one child in a family is stricken, and institutional epidemics are practically unknown. The association clinically of putrefactive diarrhea lends color to a gastro-intestinal source, if we may exclude insect inoculation. From the fact that several physicians who have brought their own children to me for treatment, after having seen cases of infantile paralysis, I feel that every practitioner, when exposed to even a suspected acute case of infantile paralysis should wear a gown, protect his hands by rubber gloves and his respiratory tract by a surgical mask. The case should be otherwise isolated as in any infectious disease, plus a gown, a nose and mouth gauze mask for the nurse and mosquito netting over the patient to prevent hematogenous spread if the disease is insect borne. Early diagnosis is essential for the protection of all concerned and physicians should be on the *qui vive* in the late summer and early fall, when it is more prevalent.

In 90 per cent of cases seen, the history throws no light on the source of the infection. These cases are isolated and sporadic as a rule, rather than epidemic; rural more often than urban.

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* Read before the West Virginia State Medical Association, White Sulphur Springs, W. Va., June 21, 1927.

I do not think there is any doubt that all acute cases should be reported at once to health departments and proper isolation insisted on. If carriers exist, no more is to be gained by swabbing the naso-pharynx to obtain the virus in suspects, than is to be obtained from the cultures from the naso-pharynx for diphtheria, as we do not know how very many individuals may have personal immunity and a virulent virus. The only hope, with the present knowledge in preventing this disease, is in the use of a vaccine or serum, as is the case in diphtheria. At present our only source of serum is from the blood of otherwise healthy children, who have recovered from the acute phase of this disease, if they are allowed to be donors. In our experience this is readily granted, as a parent freely acquiesces in any endeavor to prevent the serious disability in the children of others, from which their own child has suffered, if the matter is explained.

I am free to state that at the onset, but at the onset only, this serum seems to have a most beneficial effect in lessening the wide distribution of the paralysis in the various parts of the body and limbs of the sufferer. Let us consider this disease in three stages:

(a) *Febrile Stage.* Hospitalization at the earliest possible moment, I consider most important, or I may say, even essential, in its bearing on the prognosis as to the degree of the ultimate paralysis. Here not only can the lumbar puncture be done for confirmatory diagnosis, but through this needle about three-fourths of the amount of cerebro-spinal fluid withdrawn can be substituted by convalescent serum obtained in the hospital subdurally injected with .5 to 1 cc. of adrenalin. We also use urotropin 1 to 2 grains every two hours during the first week, as Cushing pointed out it rapidly appears in the cerebro-spinal fluid and has an antiseptic value. The lumbar puncture has a most marked effect in relieving the restlessness and headache present in the febrile stage, as well as proving curative in a measure. In addition in hospital environment, every effort can be made for the essential elimination of the toxin by the bowels, skin and kidneys. Of late stress has been laid in the March number of *"Physical Therapeutics"*, by Stewart, Snow, Kraft and Kovacs, on the use of deep therapy lamps to produce hyperaemia to front and back of the body and especially to the Morton wave and static sparks from the static machine to effect, what they call, a "molecular massage" over the spine to lessen the edema in the meniniges, and the round cell infiltration around the vessels, in the anterior horn, which may be occluded by the infection. Light destroys the virulence of the virus in vitro, therefore we may reason that deep light penetration will also do this in vivo. Most surprising and speedy results are reported. The non-vacuum electrode of the Tesla terminal of the diethermal machine has also been recommended for the same purpose, *i. e.*, lessening the hyperemia in the cord. Of course, aside from the possible specific action of the virus upon the motor neurons, there is unquestionably circulatory interference and pressure from edema exerted upon them, which if not relieved may do irreparable damage. Our early efforts for the recognized need of relief of congestion required in former times the use of the Paquelin cautery, iodine, warm baths or other counter-irritants to the spine.

It is an accepted principle among specialists that rest is essential in the convalescent stage and the maintenance of the normal contour of the spine and limbs from contracture and the unopposed action of the non-paralyzed muscles, by plaster casts, braces or sand bags. Relief of strain, especially of the deltoid, by the weight and drag of the arm, is necessary so that this part shall be supported and the humeral head kept in close contact with the glenoid, otherwise the partially paretic fibers will not come back and regain their tone.

Too often physicians and parents are too impatient to get the little one on foot again, and massage is begun too soon when rest is needed.

(b) *Convalescent Stage.* As a minimum, three months after the onset should elapse before massage, faradic or preferably sinusoidal electricity is used on the individual muscles. Galvanic electricity is used

only for diagnostic purposes to determine "the reaction of degeneration". Muscle training to help weakened muscles to "come back" next follows and deserves a paper by itself. Braces or jackets are essential so long as there is loss of alignment in the limbs or spine, or danger of subjecting a part to undue strain. Of course, braces must be prescribed definitely and fitted to the individual case, just as eye-glasses should.

(c) *Chronic Stage.* Neglected cases and those treated inefficiently in the early stages, furnish a very large proportion of patients seeking aid of orthopedic or reconstruction surgeons.

Operative procedures to lengthen or shorten or transplant tendons or muscles call for surgical and mechanical ingenuity, experience and judgment. At least to secure normal alignment of parts and correct deformity should be our aim, and with the thought in mind *primarily* of *securing restoration of function,* if possible. It is necessary to correct deformities by stretching, operation or casts, before a transplantation is done, to effect the maximum in result. In some instances it is necessary to do osteotomies or to effect a synostosis between bones in order to help out transplanted tendons. The principles involved in these procedures aim to use a muscle of less importance, or that can be spared, to perform a function of major importance. No muscle can serve two purposes. A muscle should pull in a straight line between its origin and its new insertion. Thus we can use, for example, one of the three overactive peronei producing a flat foot, to take the place of a paralyzed tibialis-anticus. Or in paralytic club foot we can depend on the tibialis-posticus and Abductor pollicis for purposes of adduction and steal the tibialis-anticus for attachment to the outer side of the foot, to produce abduction, if the peronei are gone. Technique for these procedures I published in 1909, 1910 and 1924.

For foot drop I suggested suspension of the foot from the shin by a strip of Fascia Lata to help out the weakened anterior muscles and combat over-strong calf muscles.

For paralysis of the quadriceps and no power of extension or support of the knee, one can choose often a vital sartorius or biceps or others of the hamstrings to stabilize the knee by transplantation into the patella. An overactive biceps also produces knock-knee.

Synostosis of foot bones or in deltoid paralysis the humerus to the glenoid often accomplishes restoration of alignment and partial restoration of function which was lost. Many of these operations enable the patient to discard braces, a great desideratum.

The illustrations will visualize these procedures better than words can describe them. Finally, every practitioner should make an effort to help ferret out the mode of infection in this far-reaching disease, which when found may help us then materially to prevent it.

DISCUSSION

DR. ARTHUR S. JONES, Huntington:

Dr. Taylor has given us a very compact paper, but he has included a lot of material and a lot of thought. I do not know that I could add very much to it except to emphasize, perhaps, some few practical points that may help you in these cases which so many of you run on to and are so very anxious to get rid of by sending them to the orthopedist.

In the acute febrile stage there is often, accompanying it, a very obstinate constipation; and I think most of us feel that a very active catharsis is essential. One of our leading men said he had never seen an acute infantile paralysis extending over any length of time that did not recover when large doses of castor oil were given immediately after the onset. That is very helpful, and I think it is well for you to think about in the smaller places where you have not the facilities for electrical treatment and the appliances, etc.

In the early stages of it, where the muscle soreness is marked, massage should not be resorted to, but the treatment should be

symptomatic, keeping the patient as comfortable as possible. In the meantime, keep the child on a hard mattress and in as symmetrical form as possible keep the body in muscle balance and you will avoid the extreme contractures. You will also shorten the muscle soreness, which you can prolong for weeks and weeks and months by too much treatment. Then you can avoid the contractures which come from putting on appliances too soon and from keeping the child in one position too long. The mother puts the child in a chair and goes off and forgets it, and then you get his contractures, etc., and the child has to be straightened. Another instance is, when the child is in bed, letting the bed clothes fall on the feet. If the nerve is destroyed nothing will restore it except these various operations Dr. Taylor has shown. If it is only temporarily out of commission it is going to recover if you have not damaged the muscles by allowing them to be unduly stretched for any length of time. That is what we call keeping them in muscle balance. You can let your hand hang down for two weeks or three weeks and you will be absolutely unable to raise it. Muscles quickly lose their contractile power. They are made up of thousands of fibers which soon lose their contractile power, and even if the nerves recover the muscles will not function. So you can easily save the child a good deal by avoiding these contractures and keeping it in muscle balance until it is time for it to get up and be put in braces.

Braces are not made to correct deformities but are made to hold the body symmetrical after you have gotten it symmetrical. We put them into braces to hold the body symmetrical and to prevent this undue stretching of the muscles. We nurse them back by physiotherapeutic methods until the muscles gradually get strong enough to do the work themselves.

I want to thank Dr. Taylor for such a splendid paper. I hope he will come to West Virginia often and hope to have him in Huntington as a guest sometime.

DR. E. BENNETTE HENSON, Charleston:

I want to ask Dr. Taylor, in closing the discussion, to tell us how he handles the spinal case with paralysis and if he advises fusion of the spine in those cases and, if so, at what period.

DR. TAYLOR, closing the discussion:

In regard to assuming a malposition, I do not think the doctor can always be blamed. Say the child develops a very bad curvature of the spine, such as the child in that first picture—the mother or father will say "Johnnie (or Susie) is more comfortable lying on the side than on the back in a straight position—or lying on a soft mattress or a pillow than on a hard mattress." We know if the part is held crooked for a long period the bone will undoubtedly grow crooked, because bones adapt themselves. This will necessitate much more of an operation later.

Now, as to when fusion of the spine should be done, I do not think it should be done for two or three years after the onset of the attack. Of course, we have to bear in mind a certain amount of judgment as to whether the bones are stiffening or hardening, causing those extreme deformities. I think it is largely a question of judgment in the individual case as to when to do this.

Anesthetics in Labor

A considerable discrepancy exists among the values obtained by many observers for the normal bleeding and coagulation time of the blood in the new-born. In an endeavor to discover this factor, the bleeding and coagulation time was taken by Heyworth N. Sanford, New Haven, Conn. (*Journal A. M. A.*, Jan. 23, 1926), on 600 infants at birth and during the first ten days of life, the entire series covering a space of two years. Two hundred patients were delivered with ethylene, 200 with nitrous oxide, and the remaining 200 without an anesthetic. Nitrous oxide caused a prolongation of the average bleeding time at birth of one minute, and the coagulation time of two minutes. Both, however, corresponded to normal in nine days. Ethylene caused a prolongation of the average bleeding time at birth of two minutes, and the coagulation time of three minutes. Both, however, practically returned to normal in nine days.

TREATMENT OF CANCER OF THE CERVIX*

By WILLIAM S. GARDNER, M. D.
Baltimore, Md.

THE object of this paper is not to advocate any particular line of treatment, but to try to impress a few cardinal pathological facts upon which rational treatments must be based.

The prognosis and treatment of carcinoma of the cervix depends, as in all other diseases, upon the pathology present. Innumerable papers are read and published upon the treatment of uterine cancer, but in most instances no reference is made to the pathology and only in very rare cases is there any indication that there are any differences between the various growths except that due to the progress of the disease.

It is generally recognized that adenocarcinoma of the cervix and the body differ from the epitholiomata of the cervix, but there differentiation stops.

Look over operation or radium statistics and observe how rarely any statement as to what conditions either the operation or the radium was expected to remove. Because there are no available statistics of value which give even an approximate statement of the pathology present none will be quoted. It would be just as rational to quote statistics on the treatment of fever, without reference as to whether the fever was typhoid, typhus, scarlet, or malarial as to quote the final results of any form of treatment of cancer of the cervix without at the same time classifying the types of cancer. The usual statistics show how many patients suffering from cancer of the cervix were treated, how many survived the treatment, and how many lived three to five years afterwards. There is nothing to show whether the cancer was of the scirrhus type, basal cell type or whether it was of the so-called squamous cell type. Any one dealing with the first two types mentioned ought to get a high per cent of permanent recoveries, if any efficient treatment is used, but in the third type the permanent cures approach zero.

If we are to think of uterine cancer intelligently we must stop thinking of it as a single

A. Scirrhus Carcinoma of Cervix

entity with a fixed progression, and learn that the cancers of the uterus have only one characteristic in common and that is that sooner or later all will cause death: but the rapidity of growth, the time of the beginning of metastasis and the rapidity of spread vary with the different types of carcinoma within very wide limits.

Cancers of the cervix developed from the squamous epithelium, can be divided into three general pathological groups. It is true that these forms merge into each other and it is often difficult to place exactly in its proper group every cancer, but there is usually no difficulty in arriving at a sufficiently exact classification to indicate both treatment and prognosis.

* Read before the sixtieth annual meeting of the West Virginia State Medical Association, White Sulphur Springs, W. Va.

These groups may be designated as a, b, and c.

The cases that fall into group A, from want of a better name called squamous carcinoma, are easily recognized even by the amateur microscopist, by the great variety in size and great variations in staining

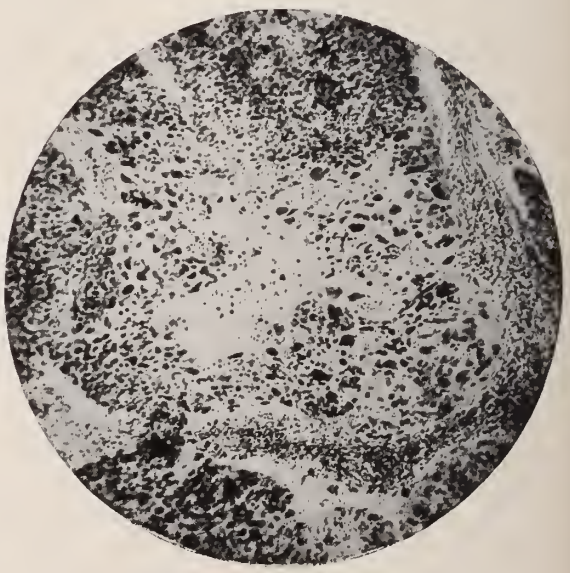
B. Basal Cell Carcinoma of Cervix

qualities of the cells composing the growth. The latter variation is due, of course, to the irregular distribution of chromatin. There are other characteristic indications that are mentioned by the expert, but the two points mentioned are all that is necessary to recognize the members of this group. The growth even in the earlier stages presents large masses of carcinomatous tissue invading the deeper structure and destroying everything before it. These growths metastasize early and rapidly into the broad ligaments. It is doubtful if one is ever seen that has not already spread beyond the uterus. This type is present in almost every instance where the patient is under thirty-five years of age, but fortunately its frequency decreases as the age of the patient increases.

Group B: Usually called the basal cell carcinoma, from the theory that is derived from the basal layer of the squamous epithelium or from the fact that its cells resemble the cells of the basal layer. The general appearance of this type when first viewed is that of dense masses of cells arranged in groups, and surrounded by relatively broad areas of normal cervical tissue. When the cancer masses are examined it is noted that the cells are very uniform both in size and in staining qualities, and that many of the groups of cancer cells have areas of necrosis in the centers. This type grows relatively slowly and does not metastasize nearly so early as those in group A.

Group C, or the scirrhus type is recognized by the relatively small masses of dense, apparently compressed cancer cells that are surrounded by a new growth of connective tissue. This type develops slowly, and does not metastasize to a distance early. It is found chiefly among women of the later years of life.

Prognosis: Cases of Type A, however early seen or vigorously treated are nearly all hopeless from the time the diagnosis is made. There is scarcely a fighting chance. I have



C. Squamous Carcinoma of Cervix

not seen a single one of these cases that has survived five years.

Groups B and C are amenable to treatment and when diagnosed early can be cured.

It must be remembered that none of the squamous cell carcinomas grow upward into the body of the uterus. The metastasis is outward by direct continuity of tissue into

the broad ligaments. It is estimated that about thirteen per cent of all uterine carcinomata metastasize through the lymphatics. Consequently the whole problem except for the 13 per cent, is one of removing invaded tissue in the cervix and nearby broad ligaments. It is generally conceded that the best results in the early cases are had by surgical means, the only remaining question is: what operation offers the best results? And by best results we mean the aggregate prolongation of life.

To me it is perfectly clear and logical that the proper operation removes the diseased tissues and a reasonable margin beyond, and does not disturb unaffected tissues. For these reasons I believe that an amputation of the cervix with a removal of the bases of the broad ligament is the operation of choice. The morbidity following such an operation is very slight: the mortality is practically nothing; the permanent results are equal to those from any method of treatment that has been proposed.

Amputation of the cervix by an electric cautery was the operation done by Dr. John Byrne, and no one has had better results than he.

In some cases it will be found easier to do a vaginal hysterectomy. With this operation the mortality is very low and the final results about the same as the cervical amputation.

The advocates of the extensive abdominal operation for cervical cancer claim that the infected glands can be removed and a wider area of the broad ligament can be resected than by any vaginal method. The latter statement I do not believe to be true; certainly as much of the base of the broad ligament can be removed through the vagina as by any method.

It is true that a part of the glands into which the uterine lymphatics drain can be removed better through an abdominal incision. But the price paid for this advantage is a tremendously increased operative mortality. The best that Wirtheim, who introduced the operation, could do gave an operative mortality of 19 per cent. Some of our American operators have reduced this operative mortality to about 11 per cent; but many of them do not do the wide dissection advocated by Wirtheim and it is questionable whether any of them do the operation advocated by Wirtheim just as he did it. Now if it is admitted that the only real reason for the abdominal operation is the removal of the malignant glands which occur in 13 per cent of these cases and the immediate mortality when the operation is done by the most expert is 19 per cent it is clear that there is an immediate loss of 6 per cent over the deaths that would have occurred from gland involvement, if nothing had been done. No one pretends that all the cases of involved glands operated upon by the abdominal method recovering from the operation are permanently cured, and then the 6 per cent difference between operation mortality and gland involvment is much increased. The years of life lost by the high operation mortality are not made up by the increased number getting prolonged relief.

Inoperable Cancers

That large group of cancers of the cervix that have progressed beyond the point where it is at all probable that they can be removed demand a large share of our consideration. This group embraces more than two-thirds of all such cases seen. While so few of them are cured that the percentage is almost nothing, still much can be done to make these people more comfortable and prolong their lives.

The two complaints that call for relief are hemorrhage and pain, but the stopping of the absorption into the system of the toxic products of decomposition is also important.

One of the most efficient means of controlling these three conditions is the use of the cautery. Any kind of a cautery can be used, but by far the most efficient with which I am acquainted is the Percy cautery. It combines the bulk and relatively low temperature of the soldering iron with a continuance of action. I have no faith in the value of the roasting process as originally advocated by Dr. Percy, but a temperature high enough to actually destroy any tissue

subjected to it is of great value. Before using the cautery I scrape and cut away all tissue that can be removed with a large sharp curet. This curetment saves time and gives some idea of the extent of the growth. The cautery is then applied and the tissues destroyed as far from the cervix as it is thought safe to go. Special care must be taken not to injure either the bladder or the rectum.

After the cauterization for a few days there is some discharge due to the casting off of the burned tissue, but the active bleeding stops at once and the pain is either greatly relieved or entirely disappears.

In many of these patients seen two months after cauterization the vault of the vagina will be found healed over and smooth. Of course these patients are not cured but they are temporarily comfortable.

Pretty much the same results are brought about by radium; even the most ardent radiologists do not claim to cure these advanced cases. Many of the patients that I have seen complained bitterly of the discomfort following the use of radium. Injuries to the bladder and rectum probably occur in a larger proportion of cases in which radium is used than follow the use of the cautery. The cautery has a much wider applicability, because any one can get a cautery, but only a relatively few can secure sufficient radium to use in these massive growths.

THE DIAGNOSIS AND TREATMENT OF CORONARY THROMBOSIS*

By ELMER H. FUNK, M. D.
Philadelphia, Pa.

PAIN in the chest is a common symptom of aortitis, aneurism, aortic insufficiency, and coronary obstruition, and occurs less frequently with endocarditis, myocarditis, and pericarditis. While it is usually referred to the precordium or the supracardiac region, it may be referred to the back, as an aneurism, or to the abdomen, as in certain cases of coronary artery disease. There is some evidence that the pain of pericarditis is due to an associated pleural involvement rather than to the pericarditis *per se*. In the absence of cardiac disorder, pain may be referred to the heart in pleurisy, and disturbances of the digestive tract, especially with distention of the stomach and colon. In neurotic individuals, in women about the menopause, and in patients with neurocirculatory asthenia, pain referred to the heart is common. The numerous explanations of the pain in angina pectoris, and the diversity of the results in the various operative procedures recently introduced in the treatment of angina pectoris indicate that the organic and functional basis of angina pectoris must be complex. For the present it is safer to consider angina pectoris as a symptom complex occurring in a number of conditions, rather than as a disease *per se*.

The purpose of this paper is to discuss one condition which is characterized by severe pain referred to the heart, namely, thrombosis of the coronary vessels, a condition which is more common than the rank and file of the profession realize.

About twenty years ago while I was a medical student I can recall the postmortem demonstrations of coronary thrombosis in a patient who died suddenly, and of cardiac infarction occurring as a terminal event in a patient who had been ill for some time with evidences of myocardial failure. These were considered as terminal events and seemingly of interest principally to the pathologist, since clinically little was said, if anything, of the possibilities of diagnosis of coronary occlusion during life. And yet, every now and then we saw a scar in the myocardium which was ascribed to the healing of an old infarcted area. It was evident to the pathologist that coronary

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occlusion was not always rapidly fatal and H. A. Hare, at the time, in one of his clinical conferences called attention to the possibilities of diagnosis during life. Hamman[1] has recently said that the literature before fifteen years ago contained no *systematic* account of the clinical symptoms of this grave accident, although isolated observers had observed, described, and recognized clinically the condition for many years before.

William Harvey described probably the first reported case, and other instances in more recent times may be found in the literature of angina pectoris. To American physicians, Dock in 1896, Osler in 1897 and 1910, and Herrick in 1912, is due considerable credit for pointing out to the profession the possibility of recognizing coronary occlusion during life. Herrick, in particular, emphasized that coronary occlusion was not necessarily fatal.

Anatomical Considerations. It will be recalled briefly that the right coronary artery arises from the right anterior aortic sinus of Valsalva and passes forward to the auriculo ventricular groove, where it courses to the right and divides into two branches; the transverse branch which continues in the groove to anastomose with the transverse branch of the left coronary artery, and the descending branch which supplies most of the right ventricle and a portion of the posterior wall of the left ventricle, anastomosing at the apex with the corresponding branch of the left coronary artery. The left coronary arising from the left anterior aortic sinus of Valsalva also divides into two branches, the transverse which passes to the left in the auriculo ventricular groove anastomosing with the corresponding branch of the left side, and the descending which supplies most of the left ventricle and the left third of the anterior surface of the right heart, anastomosing at the apex with the descending branch of the right coronary artery.

While the coronary arteries are generally considered as end arteries because the anastomoses are inadequate when a large branch, such as the descending branch is occluded, nevertheless the anastomoses are quite abundant and the capillary communication is capable of considerable expansion. The Thebesian vessels are important in supplementing the direct anastomoses between the two coronaries.

Gross[2] of Toronto, as the result of an exhaustive study of the blood supply of the heart, claims that coronary anastomoses are abundant, and that the occurrence of infarcts is not to be explained on the absence of anastomoses, but to the failure of an intricate anastomotic system to promptly and adequately compensate. In the gradual narrowing of vessels which occurs with age the anastomotic system has time to compensate and in addition a vascular supply is obtained from the subpericardial fat which steadily increases from birth to old age. At birth no blood vessels are visible in the subpericardial fat, but after the fourth decade they afford a considerable blood supply to the subadjacent muscle. Gross found that the auricular branches of the coronaries are quite inconstant; in 44 per cent of the cases most of both auricles are supplied from the right, and in 20 per cent from the left coronary. In the remaining 36 per cent the distribution of the auricular branches was about equal from the right and left coronaries. The conducting system of the heart receives a distinct and specific blood supply to both the sinoauricular and auriculo ventricular nodes, the main bundle and parts of its right and left limb. The right coronary is the most frequent source of blood supply to the nodes and the bundle, although variations occur. Since coronary thrombosis is usually on the left side, the nodes and bundle frequently escape the vascular occlusion.

Anomalies of the coronary vessels and variations in their anastomoses may be of considerable importance in certain instances. In this connection a recent case report by Smith and Grober[2] of coronary thrombosis with congenital absence of the left coronary artery, is of interest. The clinical features of coronary thrombosis were typical. The patient, aged 46 years, who had always worked hard, lived for six months after the onset of coronary thrombosis, dying eventually from progressive cardiac failure.

Necropsy revealed that the blood supply of the entire heart was furnished by a large right coronary artery. The thrombosis had occurred in a descending branch supplying the left ventricle. An extensive anastomosis had re-established a fairly satisfactory circulation in the infarcted area. This case illustrates the adjustment of the circulation which may take place when an occlusion is not immediately fatal.

Pathologic Considerations. The coronary arteries share with the other arteries of the body the tendency to become sclerotic. The factors which in general produce arteriosclerosis are etiologic in coronary sclerosis. In many instances, however, the relationship between general arteriosclerosis and coronary sclerosis is disproportionate, the coronaries being more involved than the other arteries. The disproportionate involvement of various vascular areas in the arteriosclerotic process is of course well known. It is interesting to note how frequently well marked coronary sclerosis is found at necropsy in comparatively young individuals who have had no serious cardiac disturbance during life. The coronaries may be involved at their orifices in the various lesions of the aorta without much involvement of the vessel in its course. Sudden coronary occlusion results from thrombosis or embolism. Thrombosis is more frequent than embolism and is conditioned on roughening of the intima either at the orifice or along the course of the vessel. Occlusion of a coronary vessel produces changes in the myocardium which vary depending upon the size of the vessel occluded, the rapidity of the occlusion, the adequacy of the collateral circulation, and the previous condition of the myocardium. Sudden occlusion may result in immediate heart failure and death. In rare instances where certain peculiarities of circulation exist sudden obstruction of the vessels may occur without serious results. When, as is not uncommon, preceding myocardial degeneration is present, the baneful influence of the circulatory obstruction is aggravated.

The usual result of coronary occlusion is a localized ischemic infarct of the myocardium, which if the heart survive the immediate shock, leads to progressive myocardial failure, or to rupture, or eventually to healing with thinning of the myocardial wall, bulging, and the production of a cardiac aneurism. In some instances when the infarction is small, scarring may be firm and the ultimate functional efficiency of the myocardium but slightly impaired.

The relation of so-called spontaneous rupture of the heart to disease of the coronary vessels is interesting. The condition most frequently follows coronary obstruction. Nuzum and Hagen[4] have recently collected 320 instances from the literature to which they have added five of their own. The patients are usually beyond 50 years of age. In those under 30 years of age syphilitic myocarditis is the usual cause. The rupture was located in the anterior wall in two-thirds and in the posterior wall in one-third. It was noted in the left ventricle 253 times, the right ventricle 35 times, the right auricle 16 times, the left auricle 4 times, and the intraventricular septum once. In their analysis of 325 instances of rupture of the heart, Nuzum and Hagen found that 75 per cent gave no history suggesting heart disease previous to the final illness, the onset of which was typical of coronary obstruction. When rupture occurs death ensues within a few minutes. One may assume that spontaneous rupture of the heart does not occur without a lesion of the myocardium either secondary to coronary disease or as a result of syphilitic involvement.

Clinical Manifestations. There are three groups of patients: (1) those who have had no antecedent evidence of heart disturbance and become ill "out of a clear sky", (2) those, who while not incapacitated, have had some evidence or evidences of cardiovascular disease prior to the onset of the coronary occlusion. Thus, inquiry may reveal that for some time the patient has noticed shortness of breath on exertion, or precordial discomfort, or frank attacks of angina pectoris of varying severity. There may be evidence of arteriosclerosis with or without hypertension. In several of my patients a hemiplegia due to cerebral arteriosclerosis preceded by several years the

coronary crisis. Coronary occlusion is not uncommon in patients with arteriosclerotic renal disease. (3) The third group includes those who have definite evidences of myocardial failure[5] at the time of onset of the coronary occlusion.

The onset of the symptoms of coronary thrombosis, as a rule, is sudden and characterized by severe pain in the vicinity of the heart and the symptoms of collapse. Death may occur suddenly. In some instances the pain is referred to the epigastrium and not infrequently radiates to the back, the shoulder, the arms, or to the abdomen. Dyspnea is usually present and in some instances the respiratory distress is an outstanding feature. Associated with the epigastric pain there may be nausea and vomiting. The general weakness of the patient is striking, the skin is moist, the extremities are cold, and the blood pressure reduced. The sudden drop in the blood pressure is particularly noticeable in those patients with previous hypertension. In patients with cardiac failure at the time of onset of the coronary thrombosis, the onset may be less abrupt and the symptoms obscure, especially if there is mental disturbance. A sudden aggravation of all of the symptoms of heart failure with the occurrence of a sharp persisting pain in the region of the heart, substernal or epigastric, suggests coronary occlusion.

The physical examination reveals an anxious expression, pallor, and cyanosis, the skin presenting an ashen hue with sweating and coldness of the extremities. The pulse is usually rapid, may be slow, is often irregular, and invariably feeble. The heart impulse is feeble or absent, and there is an increase of cardiac dullness, distant heart sounds, tachycardia, various types of arrhythmia, and the varying presence of murmurs. A pericardial friction rub is of diagnostic value when present, but is frequently absent. Wearn found it present in only two of 19 cases, and considers that its absence is of no diagnostic significance.

Examination of the lungs usually reveals some fine crackling rales at the bases suggestive of passive congestion or edema. In the abdominal examination as pointed out by Wearn, there may be some rigidity in the epigastric region with tenderness on pressure. This rigidity is not constant and is in contrast to the softness of the abdomen below the umbilicus. The liver may be enlarged and tender. This observation was noted in about one-half of the patients reported by Wearn and probably is another sign of failing circulation. Fever and leukocytosis are common. In a patient recently under observation there was a temperature varying between 102 degrees and 103 degrees for five days. This gradually dropped to normal before death on the seventh day. The blood counts in this patient showed 15,900 and 17,200 leukocytes.

Pain. The pain is excruciating and while it may vary in intensity, is usually constant and is in striking contrast to the short duration of the pain of angina pectoris, which lasts for only a few minutes. It may be aggravated by movement and by swallowing. It is not relieved by the nitrites and is often refractory to the usual doses of morphine. It may radiate to the back, to the shoulders, and to the arms or abdomen. In some instances the localization is in the epigastrium and the radiation to the abdomen may simulate an acute abdominal condition such as perforated peptic ulcer, gallstone colic, or acute pancreatitis.

Dyspnea of varying grades is common. In some instances it may be an outstanding feature. In one patient whom I saw the dyspnea so overshadowed the pain that the local physician had made a diagnosis of acute asthma. The dyspnea in this patient was associated with an acute edema of the lungs, distressing cough and thin, frothy, blood-tinged expectoration. Necropsy revealed a coronary thrombosis.

Collapse. The prostration is usually quite striking and is characterized by the moist cool skin, the feeble, perhaps impalpable pulse, and the low pulse pressure. A knowledge of the previous blood pressure, especially in hypertensive patients, is important in determining the actual fall in the systolic pressure accompanying the attack. The diastolic pressure is frequently but little

changed, with the result that the pulse pressure may be reduced to 15 or 20 mm. Hg. A diminution or actual suppression of the urinary secretion frequently follows the reduction in the blood pressure.

The Fever and Leukocytosis. These are commonly present and are attributed to the absorption of the products of cellular necrosis in the infarcted area. The elevation of temperature is usually not evident until about twenty hours after the onset. The temperature elevation seldom exceeds 102 and its deviation varies. In a patient recently under observation fever was present for 15 days. The leukocyte count was 22,000. Leukocytosis rarely exceeds 20,000.

Prognosis. The clinical course depends upon the extent of interference with myocardial function. Sudden death may occur before the physician has had an opportunity to examine the patient. Coronary thrombosis is probably one of the commonest causes of sudden death in adults beyond middle life. No doubt many of the sudden deaths ascribed to apoplexy or to acute heart failure are in reality due to this cause. I can recall a patient of 60 years of age with obvious arteriosclerosis, who for nearly a year had complained of fleeting pains about the heart with some dyspnea on exertion. In spite of medical advice he persisted in continuing at his executive work, and retiring one evening after a strenuous day, was found dead in bed the following morning. Necropsy revealed thrombosis of the left coronary artery. While sudden death is common, patients may survive for days, months, or even years. In those who survive, the symptoms are those of cardiac failure, from which, with prolonged rest, there may be a considerable recovery. It is because of this possibility of recovery that the recognition of the disease is important.

Diagnosis. In the diagnosis it is important to remember that coronary thrombosis occurs usually in patients after 40 to 50 years of age. It is in the age period when the various manifestations of arteriosclerosis become evident that coronary thrombosis occurs. Males seem to predominate, but females are likewise affected. The occurrence of coronary thrombosis in patients with angina pectoris may in some instances be predicted. The occurrence of sudden death in such an individual suggests coronary occlusion. In patients who have cardiac failure at the time of the onset of the coronary thrombosis the pain and sudden aggravation of all the symptoms suggest coronary occlusion. In patients who present the typical picture, the sudden onset of severe and protracted retrosternal pain with or without radiation associated with symptoms of heart failure such as dyspnea, cyanosis, edema of the lungs, engorged and tender liver, cardiac findings such as feeble or absent impulse, increase in size of cardiac dullness, pericardial friction, drop in blood pressure, fever and leukocytosis, the diagnosis is not difficult. With these points in mind the differentiation from angina pectoris should be clear.

In less typical cases, *e. g.*, those in which the pain is referred to the epigastrium with nausea and vomiting, the question of perforated peptic ulcer, gall-stone colic, acute pancreatitis, or ptomain poisoning may arise. The leukocytosis may add to the confusion. The previous history of the patient, the cardiac failure, the absence of board-like rigidity, the softness of the abdomen below the umbilicus, the basal rales, etc., together with a careful analysis of the pain, dyspnea, and other symptoms, should prevent a useless, if not fatal, laparotomy.

The differentiation of the site of the coronary thrombosis is usually impossible. An acute enlargement of the liver suggests right coronary thrombosis. In a patient with an old thrombosis of the left coronary, a recent thrombosis of the right coronary was suspected by this sign and verified at necropsy (Libman).

In those who survive the acute attack a latent period of varying duration occurs followed by aneurism of the heart, rupture of the heart or death from myocardial insufficiency. Patients with old coronary closure frequently present a peculiar color of the face which has been described as "a leaden tint spread over an earthy hue of

skin" (Libman). Aneurism of the heart[6] in such a patient should be suspected when there is distinct pulsation over a fairly wide area of the precordium with absent or very weak heart sounds. The difficulties of diagnosis in obscure cases are exemplified in the report by Norris[7] of a patient in the Pennsylvania Hospital. A negro laborer aged 59 years with an old history of syphilis was admitted complaining of cough and shortness of breath of some years' duration but with distinct aggravation for six months prior to admission. After most careful study a diagnosis of neoplasm of the lung and pleura was made. Death occurred suddenly and at necropsy a tuberculous pleurisy and cardiac aneurism were found. The aneurism measured 5 x 6 x 3 cm., the walls were thin and contained calcium deposits, and a small blood clot. The location of the aneurism was unusual in that it originated from the upper posterior, rather than the lower lateral surface of the left ventricle. At the base of the opening a narrowed calcified coronary artery was visible. The immediate cause of death was cerebral embolism; the embolus originating from the aneurismal clot. This case illustrates that both infarction and aneurism may occur clinically and not be recognized.

The Electrocardiogram. When this aid to diagnosis is available it may be employed to advantage in determining the type of abnormal mechanism present. Changes in the deflection of the T wave and a decrease in the amplitude of the Q. R. S. complex are the most constant findings. According to Smith[8], the former is dependent upon the formation of an area of infarction in the apical region of the left ventricle, and the latter with the more extensive and disseminated changes in the myocardium. Almost every type of disordered rhythm has been found in coronary occlusion, as well as normal rhythms. In other words, there are no pathognomonic electrocardiographic findings in coronary thrombosis. As Hamman has recently stated, "The electrocardiogram cannot make a diagnosis of coronary occlusion, it can only indicate changes in the heart muscle. However, such an indication considered in conjunction with all the other clinical evidence may have an important bearing upon diagnosis. Experience alone will tell us just how important this bearing may prove to be. I need only add, what has already been intimated, that the absence of these electrocardiographic abnormalities does not exclude the diagnosis of coronary occlusion. A single examination, and particularly a single late examination, may fail to show alterations that might appear in records taken frequently and more especially shortly after the accident."

Treatment. Apart from absolute rest in bed, which is most important, the two outstanding indications for treatment are (1) to relieve the pain and (2) to support the circulation. The pain requires morphine. Other remedies, including the nitrites, do no good, and even morphine in the usual doses may fail. Large doses are usually required to ameliorate the severity of the pain. The ice bag is seldom comfortable and heat locally gives but little comfort. Both may be tried. Riesman obtained distinct relief in one patient from the application of leeches.

It will be of value to pause and consider the divergent views with regard to the use of digitalis. At first thought there would seem to be no question as to the indication for digitalis because of the presence of myocardial insufficiency. Herrick[9] in 1912 stated that the prejudice against digitalis was only partially grounded on fact and stressed its great value when promptly administered by the hypodermic method. Others before and since, and largely on theoretical grounds, have argued that to increase the force of the heart with digitalis might compromise the chances of recovery; that since experimentally both coronary occlusion and excessive digitalization produce ventricular fibrillation, the clinical use of the drug might precipitate fibrillation when there is a tendency to that condition, such as occurs in human coronary occlusion. Gold[10] has recently made some interesting observations in animals with experimentally produced coronary occlusion to determine the susceptibility of the heart to the toxic

action of digitalis. He found that the effects of occlusion of different parts of the coronary circulation vary widely, depending upon the differences in the compensatory circulation. No constantly occurring irregularities were observed after ligation of any particular branch of the coronary vessels. He says that the failure of the portion of the heart deprived of blood to fibrillate is probably due to an area of block confining the circus movement to the remaining portion of the heart; that the failure of the fibrillation to persist after ligation of a large coronary vessel is probably due to the diminished tissue mass involved in the fibrillation. He further observed that a heart that has been in ventricular fibrillation from coronary occlusion and has recovered temporarily shows no diminished tolerance to the toxic action of digitalis. The average fatal dose of digitalis for animals with varying degrees of coronary obstruction was the same as that for normal animals. The experimental data, therefore, lend no support to the fear that in the presence of coronary occlusion digitalis may precipitate ventricular fibrillation more readily than in the normal heart. From the clinical view point I find myself in agreement with Gold that theoretic generalizations with regard to the response to digitalis in disturbances of the cardiac mechanism or in conditions leading to such disturbances, are not justified. Personally, I have reason to believe that in some patients, at least, its good influence is unquestionable. Among other drugs, atropine should be mentioned as valuable when pulmonary edema threatens the patient's life. Caffeine sodium benzoate by hypodermic injection is useful. Strychnine and camphorated oil are seldom of value. All medication, at least during the acute attack, should be given hypodermically.

The most important general measures are absolute rest and quiet in the sick room, with external heat to keep the body warm; and restriction of the diet to liquids, milk and fruit juices, during the acute stages; and the gradual return to semi-solid food as the condition of the patient improves. After the attack is over bed rest should be continued for a long period of time, since the inevitable result of coronary occlusion is a weakened myocardium which may only partially recover its previous strength. The return to exercise should be most gradual. It must be kept in mind that a recurrent attack, sudden heart failure when the patient seems to be improving, cardiac rupture and sudden death, cerebral or pulmonary embolism, and subsequent gradual myocardial failure are future possibilities. In the effort to prevent or delay the occurrence of these events the prolonged rest is imperative.

Finally, since coronary sclerosis is so much more common than coronary thrombosis, one is tempted to assume some as yet unknown etiologic factor or factors in the causation of the latter. The determination of these factors by scientific investigation may lead in the future to definite methods of prevention of this serious condition.

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CARCINOMA OF THE UTERUS*

By ROBERT K. BUFORD, Ph.G., M.D., F.A.C.S.

CARCINOMA of the uterus is the most frequent tumor of this organ. Orth states that it forms 30 per cent of all carcinoma in women. It caused 14.3 per cent of the 31,000 deaths from malignancy in women in the United States in 1914. Roger Williams writing in 1896 stated that one in thirty-five of all the women over 35 years of age died from uterine cancer in England and Wales according to the Register General's statistics. Kaufman found that cancer of the uterus constituted 14.7 per cent of the cancers in both men and women in the Basle Institute and 15.6 per cent of a similar series in Gottingen.

The etiology of cancer is not known. Time will not be consumed in discussing theories. However, I wish to mention some of the local conditions which have been emphasized in the past as predisposing causes in the absence of true etiological factors of cancer. Cervical lacerations, erosions and chronic endocervicitis, following cervical trauma; first, cervical laceration; second, endocervicitis; third, infective leukorrhea causing irritation of erosions.

The majority of the cases of uterine cancer develop about the time of the menopause; more are found in the fifth decade. Cervical cancer is generally considered to develop earlier than that in the body of the uterus.

Much of the older study of uterine cancer is not of value for investigators at the present time, since in a single report there is often embodied a mass of statistics of both fundal and cervical cancer which are grouped together as if they were a single entity. This confusion unfortunately is maintained by a number of writers of the present day.

Cancer starting in the cervix of the uterus must be differentiated from that which originates in the body. The two forms are quite distinct, both histologically and clinically, a fact which serves still further to emphasize that the cervix and the body of the uterus are to be regarded as separate from each other in their pathologic and physiologic processes.

Cancer of the cervix, when it comes under observation, usually appears as a squamous cell carcinoma. In its incipiency, however, the growth presents certain differences according to the particular part of the cervix in which the disease has its origin. It is necessary that the epithelium of the cervix be divided into two parts, that which extends from the external and internal os, the so-called endocervix; the epithelium covering the vaginal portion is modified epidermis and consists of layers of squamous cells, like those of the skin without hair follicles, sebaceous and sweat glands.

The squamous epithelial cells just above the external os merge into true mucous cells, which line the surface both of the endocervix and aborescent glands that branch from the endocervix. In a multiparous woman under normal conditions the endocervix is entirely concealed and well protected by the contour of the vaginal portion. When the cervix has been lacerated the endocervix tends to evert and appears redder and more roughened than the squamous epithelium of the vaginal portion. This appearance has led to its being called an erosion or ulceration, although true erosion may occur, the condition usually is one of eversion or ectropion.

Cancer of the cervix appears most commonly between the ages of forty and fifty. The condition is very treacherous, in that it does not cause definite symptoms in the early stages, and decause the first symptoms, when they do occur are not apt to rouse the suspicions of the patient or of her physician. The cardinal symptoms of cancer of the cervix are *leukorrhea, bleeding* and *pain,* occurring in the order named. The vaginal discharge is due at first to an increase in the normal secretion resulting from hyperemia and also to a secretion from the newly developed cells. At first, therefore, the

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vaginal discharge of cancer differs from the normal secretion only in quantity and not in quality.

Gradually, however, when the walls of the blood vessels, changed by the tumor growth become permeable, the secretion becomes mixed with blood plasma and hence assumes a much more watery character, This watery consistency of the vaginal discharge is quite characteristic of cancer of the cervix and is one of the clinical signs that should arouse suspicion and urge immediate examination of the patient. Later, when the necrosis of the tumor mass takes place, with a destruction of the superficial cells and consequent infection by various organisms of decomposition, the discharge becomes exceedingly foul and of a characteristic nauseating odor.

Bleeding is due partly to an erosion of the capillary blood vessels by the action of the tumor cells and partly to trauma, by which the delicate papillary out-growths are broken off during movement of the body, as in a cohabitation or digital examination. Then it will be seen that cauliflower type of cancer growing from the vaginal portion of the cervix will bleed more readily than the infiltrating form developing from the endocervix in which trauma would play a less important part. The cauliflower type is less treacherous than the others as it gives earlier warning of its presence by bleeding. Bleeding from cancer of the cervix is always venous. Fatal hemorrhages are rare.

The ready bleeding following coitus or digital examination is one important sign and does not often exist to the same degree in any other condition.

The third cardinal symptom, pain is one that is of little value in making an early diagnosis, as it does not appear usually until the case has reached an inoperable stage. This is due to the fact that the cervix is peculiarly an insensitive organ so that while the disease is confined to the cervix itself the patient experiences no pain whatever. When, however, the cancerous process has invaded the parametrium, or has metastasized to the regional lymph glands, pain ensues and as the disease advances the pain may become more excruciating. Unilateral pain in the lower back near the ischiadic region is quite characteristic and is often seen in recurrent cases following operation before the recurrence can be discovered by objective signs.

The disease spreads to the surrounding tissue by direct extension, or by means of lymphatic and blood stream metastases. By these means the cancer is carried to adjacent structures where it develops. The disease may extend in thick masses or by these threads of cancerous tissues, before the condition is recognized clinically as cancer. The direct extension is more marked in a lateral direction and the bases of the broad ligaments are first involved. The growth soon breaks through into the lymph tracts and groups of small cells are carried along in the current until they are arrested by the constricted lumen in the lymph nodes. From this point they back up until the new cells have volume sufficient to break out of the channels. The broad ligaments are indurated in late cancers. Carcinoma of the anterior cervical lip may extend into the bladder by direct extension, causing symptoms of cystitis. The muscular coat of the bladder is rarely involved. The ureters are frequently affected by the involvement of the parametrium or by extension from the base of the bladder. Compression of the lumen is common, although complete occlusion is rare, hydroureters frequently result. The rectum is less commonly involved than the bladder. The ovaries, tubes and body of the uterus are seldom affected.

The uterine lymphatics vary considerably at different ages and attain full development during adult sexual life, reaching their maximum during pregnancy and puerperium. They are small and few before puberty and after the climateric they diminish progressively with advancing age. This latter factor is of clinical importance and explains the fact that corporeal cancer, occurring as it does so frequently in women past the menopause, grows more slowly and tends to remain localized for a longer period than does the cervical carcinoma which appears before the end of sexual activity.

Cancerous invasion of the lymph glands can be proved only by microscopic study of serial sections since the glands are usually enlarged from absorption of toxic products from the cancerous ulcers. General metastases to the distant parts of the body are surprisingly rare. The lungs and liver are the most commonly affected organs.

Carcinoma of the body of the uterus—The growth originates in the mucous membrane and tends both to proliferate into the uterine cavity and infiltrate the muscular ends of the uterus, one of these tendencies usually predominating. In the typical case that is growing outward into the uterine cavity, the microscopic appearance is that of long branching tendrils of a papillary nature. When the disease encroaches on the muscular wall glandular off-shoots are seen invading the muscle below the normal line of demarcation, between muscle and endometrium. Macroscopically upon opening the uterine cavity the growth appears as an irregular elevation of the endometrium, the surface of which in some places may be smooth and waxy, in others papillomatous. The cut surface is usually somewhat lighter in color than that of the normal uterine tissue and a rather distinct outline can be made out between cancer and muscle tissue.

The disease gradually encroaches on the uterine wall until in advanced cases the musculature may be little in evidence. In the course of time, it may break through the outer wall and become disseminated to neighboring parts; unlike cancer of the cervix it does not invade the parametrium except by direct extension, a process which indicates a late stage of the disease. Metastasis to the regional lymph nodes is later than in cancer of the cervix. Occasionally cancer of the body metastasizes to the tube and ovary in a comparatively early stage of its growth, an extension rarely seen in cancer of the cervix.

Cancer of the body occurs later in life than cancer of the cervix, the figures of Koblonck showing that in 50 per cent of cases it occurs between the ages of fifty and sixty. It is quite rare to find it in patients under forty. It is seen about one-eighth as often as cancer of the cervix according to statistics, and occurs more commonly in nulliparous women. Is often found in association with uterine fibroids whereas the combination of fibroids and cancer of the cervix is comparatively rare.

It makes its appearance by increased uterine secretion and then by bleeding. The bleeding, coming as it frequently does after the menopause, attracts the immediate attention of the patient so that she is apt to seek medical advice in time for successful surgical operation.

When the disease occurs before the menopause, its detection from clinical symptoms is more difficult. The bleeding at this time is apt to appear only as a profuse menstrual period and the mistake is often made both by the patient and her physician, of regarding the menstrual disturbance merely as an indication of the change of life. The progress of the disease, however, is usually so slow that the persistent hemorrhage finally excites suspicion in time for surgical relief. When a cancer is associated with a uterine fibroid the bleeding has no definite diagnostic characteristic which would differentiate it from that seen in one ordinary submucous myoma. If therefore, in a case of bleeding fibroids, non-operative treatment is decided on for any reason, the uterine cavity should be explored to exclude the possibility of cancer. This procedure is especially important if the X-ray or radium is to be used for there seems little doubt that in cases of myoma complicated by carcinoma or sarcomatous degeneration the malignant process is stimulated to new activity by the influence of the rays.

The diagnosis of cancer of the body should always be made by the microscopic examinations of curettings. Clinically, cancer of the body must be differentiated from uterine insufficiencies, mucous polyps, chronic interstitial endometritis, cancer of the cervix and submucous fibroids and the only sure way of accomplishing this is by means of the microscope or hysterotomy. The treatment is immediate total abdominal hysterectomy. It is of extreme importance that both tubes and ovaries should be removed on account of the frequent occurrence in

them of implantation metastases. The prognosis is very good as recurrence is infrequent, and permanent cures should be obtained in at least 80 per cent of the cases operated upon. Radium should be used when the uterus is fixed by metastases and when the patient is a poor surgical risk due to associated pathology.

The treatment of cancer of the cervix is a different story. Cancers of the cervix discovered accidently during routine physical examination are operable. Patients presenting themselves for treatment with clinical symptoms to make them suspicious or alarmed are usually inoperable, the cervix being fixed with parametrial involvement. There is no ideal treatment for cancer of the cervix. I will admit there is still a controversy as to value of radium and radical surgery. Statistics show that there is a primary mortality from 8 per cent by the master surgeon to 25 per cent by the occasional operator doing Wertheim's operation. The European clinics report better results from radium than surgery. Doederlin of Munich, has not operated a carcinoma of cervix since 1913. Clark of Philadelphia, reports good results from a series of radium treated cases. His series of radical operations did not show any more cures plus an 8 per cent primary surgical mortality. Graves of Boston, is inclined to lean to radical surgery; however, he is unable to report any better results from surgery than radium from his clinic. I have not operated but one cancer of cervix in six years and that one was operated through mistake. The usual hysterectomy for this condition is worse than no treatment. There is such a high mortality, and so many complications incident to a Wertheim operation with the results no better than radium, I cannot see the wisdom of operating on these cases; therefore, I believe that after a case has been irradiated, it should never be operated upon.

Surgery has its greatest usefulness in eradicating predisposing local causes, such as old lacerations, erosion and chronic endocervicitis. The general practitioner will play the greatest role in the future in treatment of cancer of the cervix by recognizing precancerous lesions and advising the proper treatment. I wish to emphasize one point, make a speculum examination on every woman who comes into your office and forget about the delusions that you can cure cervical lacerations, erosions and infections by local applications of drugs.

A DISCUSSION OF FIBROID TUMORS AND THEIR TREATMENT FROM A MODERN VIEWPOINT*

By WM. NEILL, Jr., M. D., F. A. C. S.
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THE LIFE HISTORY of uterine fibroids long has been the object of careful study. These tumors possess striking characteristics; with rare exceptions, they are always benign and may cause no symptoms at all, or produce a multitude of complaints from pressure as well as hemorrhage. The presence of carcinomatous or sarcomatous changes can be excluded by careful pelvic palpation, with thorough curettage and microscopic examination.

Fibroids are much more common after the age of forty, but are not unusual during the third decade and occasionally are met with in younger patients. They tend to produce or be associated with, sterility. They vary in rapidity of growth and size. The large abdominal tumors rarely cause the excessive hemorrhage usually met with in the smaller intrapelvic types. Fibroids are prone to prolong menstruation. There is a tendency for them to cease growing and decrease in size with the menopause; in rare instances they even disappear. Hyaline degeneration changes with areas of calcification are common and in the larger tumors cystic or abscess formation may be encountered. True

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sarcomatous degeneration is rare, in fact so unusual as to be considered non-existent by many authorities. Malignant changes of the endometrium are not uncommon but of no greater frequency than in normal uteri. Chronic inflammatory lesions and adhesions are more frequent in the myomatous uteri than in the normal.

Daily experiences reveal a remarkable lack of uniformity among the medical profession at large in its relation to the treatment of this condition. The only effective method, until the past ten years, has been surgical and the operation in skilled hands has become one of the safest of our major procedures. Taking an average of all hysterectomies, however, throughout the country as they are performed, the risk of life and health is still considerable, and is increased when the hemoglobin is below 35 per cent. There is always the possibility of an embolus or a protracted convalescence and untoward sequelae in the form of post-operative infection, adhesions, hematoma, hernia, ureteral injury and vaginal prolapse. Even when there is no complication following the operation, there still remains the disagreeable and painful hospital experience and it is rare for the patient to be able to take up her routine duties under several months. This, coupled with the unavoidable indictment that it is after all a mutilating operation, tends to welcome some better type of treatment. During the past fifteen years, but especially the last ten, radium and X-ray have been used in the treatment of fibroids with increasing enthusiasm by the gynecologist, the results of treatment improving *pari passu* with the perfection of technique and selection of cases.

We have today manifestly before us the choice of one of the following plans: (1) The "let alone and observe"; (2) operate and remove; (3) radiate. The "let alone and observe" plan, as yet not often recommended by doctors at large, is, I believe, the best in many cases, taking all fibroids as they come into the hands of the general practitioner. This judgment needs modification in an active surgical clinic to which patients are apt to be referred because of something unusual in the condition—in other words, patients who have been carefully observed by their home doctor over a considerable period. Where there is no obvious disturbance to health, present or threatened, it is safer to advise the "let alone" plan; the mere fact of the discovery of a tumor is not a sufficient indication for operation, as many believe. This fear of a tumor, or "onkophobia", was generated a couple of decades ago by literature, piling up statistics and setting forth the numerous complications frequently associated with fibroid tumors. While I do not question these statistics, I do consider the deductions and consequent practises based upon them largely erroneous. I would insist, in correction of this error, that these possible complicating conditions which so often have been used to induce the patient to submit to operation, can almost invariably be discovered with a careful examination. This then enables the surgeon to operate, not for fear of meeting some one or more of the long list, but because of the known presence of a particular and clearly determined condition, while at the same time he has refused to operate in other cases in which he has found no allied disease. My conclusion therefore on this particular subject is that it is possible to found the operation on a definite diagnosis as to the growth itself or its determined complications, and not upon a mere statistical phobia.

The second choice, "operate and remove", I believe is indicated in the following types: (1) Very large tumors, that is, those rising above the umbilicus; here there is always an uncertainty of diagnosis without exploratory incision; (2) large tumors associated with pain; (3) tumors accompanied by pelvic inflammatory or any well-defined lateral disease; (4) all tumors accompanied by malignancy of the uterine body; (5) tumors interfering with urinary function by impaction within the pelvis; (6) calcified tumors as suggested by their unusual hardness and definitely disclosed by the X-ray; (7) when there is a reasonable doubt as to the exact nature of the diagnosis; (8) in a small but definite group where there is decided neurological unstability.

Myomectomy is limited in its execution to

cases where the tumor is single or at least not multiple. Its mortality rate is higher than hysterectomy and when performed where hemorrhage is a pronounced symptom, often does not bring relief. There is always a tendency to recurrence, requiring subsequent treatment. It does leave a distinct possibility of pregnancy and normal child birth, but this is also possible in fibroids without myomectomy.

The third choice, "radiation", I believe is indicated, (1) in all tumors with hemorrhage, from small myomatous nodules up to freely movable tumors reaching as high as the umbilicus and in selected cases, even above the umbilicus as reported by Dr. C. F. Burnam in *Amer. Jour. of Ob. & Gyn.*, Oct., 1924; (2) in any of the operative class where operation is dangerous. Radiation will accomplish the following: (a) control hemorrhage and check menstruation; (b) reduce the size of the tumor; (c) in the majority of instances cause its complete disappearance; (d) in the occasional case in younger patients a return of menstruation.

Radiation from the primary mortality standpoint is a safe procedure. The effect is not definitely understood but its action apparently is two-fold—(a) through the ovary, (b) directly on the tumor itself. It is possible for a patient to become pregnant and give birth to a normal child after the disappearance of a uterine fibroid. It is a very rare occurrence for a fibroid to disappear completely without a cessation of menstruation and the persistence of menstruation frequently is accompanied by a re-growth of the tumor. Contrasting with this—if a fibroid disappears and after a year or more of amenorrhea there is a return of menstruation, the fibroid is unlikely to grow again. It is evident from this that in treating fibroids with radium, whether in young or old, a treatment to bring on a complete amenorrhea is necessary in order to secure a satisfactory result. It is of interest in connection with the hot flushes and other menopausal symptoms induced that they are less marked in the young than in older patients. These symptoms often are absent, or slight and are not uncommon after hysterectomy even when the ovaries are preserved.

An accurate pre-treatment diagnosis is more important when radiation is considered as a method of treatment than operation. In every instance an examination under anesthesia, with palpation and diagnostic curettage, should be made. In very large tumors it is increasingly difficult to exclude ovarian malignancy, and when there is a history of exceptionally rapid growth it can almost be assumed. It is frequently impossible to differentiate adenomyoma from ordinary myoma, but this is only of pathological interest as both do equally well from radiation. When hemorrhage has persisted for years there is a tendency to hypofunction of the hematopueic organs and a resulting secondary anemia. These types require hospital treatment, rest in bed and blood transfusions, just as when a hysterectomy is to be done. In the ordinary case of intrauterine radium treatment not more than three to seven days' rest in bed is necessary.

Submucous fibroids, presenting at the cervix, should be removed by vaginal myomectomy, and when other tumors are present the same general principles as to operation or radiation are to be applied.

Intrauterine radiation is safe in all fibroids when there are no local signs of infection in the pelvis. It should not be employed when definite masses in the appendages are detectable. Such cases are likely to set up an acute process. It is possible here to treat externally, either with radium or the X-ray, without running a serious risk. Incarcerated pelvic tumors are best treated by external radiation. The fact that a tumor is subserous, interstitial, or submucous is of no consequence so far as response to radiation is concerned.

The effects of radiation on the tumor are variable; in some the reduction is quite marked before amenorrhea is established; occasionally a tumor completely disappears in from two to three months; in others the reduction is slow, extending over many months or even years after the bleeding has ceased. Intrauterine radiation produces a more rapid reduction than external radia-

tion. Approximately 80 per cent of the smaller fibroids disappear from it and about 50 per cent of the larger ones.

SUMMARY

It is obvious from what has been said that there are definite fields for operation, radiation or let alone and observe. There is too much interference with fibroid tumors on insufficient indications. Each case should be given most careful consideration and the method followed which seems logically to meet the necessity of the individual case. I believe it is a mistake to lay down any hard and fixed rules. The absence of mortality and the greatly lessened economic disablement, particularly in those who must work for a living, favors radiation as a first choice, especially as it in no way makes operation more difficult should this ultimately be necessary.

From the Howard A. Kelly Hospital.

Triumphs of Bio-Chemistry

The presentation of the Willard Gibbs medal to Dr. John J. Abel, professor of pharmacology at Johns Hopkins University, is concrete evidence of the appreciation of the work which he has done in the field of bio-chemistry, and reminds us of the debt which the practitioner owes to those working in the laboratory.

Through Dr. Abel's discoveries of the chemical compositions of epinephrine and insulin, and isolation of these compounds in pure form, our knowledge of bio-chemical properties of these drugs has been increased greatly, and the possibility of their synthesis on a commercial scale is now more than a vague dream.

It is well for us to remember that in the accomplishment of scientific work, the means is as important as the end, and that it is only by the work of such men as Dr. Abel, in various fields of scientific medicine and in the general sciences, that our advancement can continue.

The aim of modern medicine has been, so far as possible, to substitute known specific remedies for shotgun prescriptions, some of which would, however, work empirically. With the help of such men as Dr. Abel we can carry out this idea still further, applying it not only to biological preparations, but also to the active principles contained in these biological preparations. The work of a pioneer is difficult in any line, but probably nowhere more tedious than in the investigation of bio-chemical substances where the potency of active principles is such that they are present only in very minute amounts and where their chemical composition is both extremely complicated and extremely labile. Work already done in this field leads to the hope that ultimately other of the hormones, and perhaps eventually the vitamines may be as thoroughly known as the familiar epinephrine.

Through the workers in pure chemistry, and particularly that phase of chemistry dealing with vital-phenomenal and organic substances, we may hope for as brilliant discoveries as those which have been made in the past, for with the methods already made available by the pioneer workers there should be ample opportunity for unraveling similar problems to those presented by insulin and epinephrine.—*Boston Medical and Surgical Journal.*

Public Health Report

A total of 225 cases of poliomyelitis (infantile paralysis) with 24 resultant deaths occurred in Ohio from August 1 to August 29, according to reports received by the United States Public Health, September 1.

The full text of the statement by the Public Health Service follows:

Number of cases of poliomyelitis reported by telegram for the week ended August 27, 1927:

California, 48; Connecticut, 12; Illinois, 24; Indiana, 4; Maine, 7; Massachusetts, 55; Michigan, 10; Missouri, 6; Nebraska, 4; New Jersey, 20; New Mexico, 6; New York, 23; New York City, 35 cases; Oklahoma, 11; Pennsylvania, 8; Rhode Island, 4; Tennessee, 4; Texas, 12; West Virginia, 11.

Ohio reports 225 cases and 24 deaths in 40 different counties from August 1 to 29. —*U. S. Daily.*

OBSERVATIONS ON THE EARLY RECOGNITION AND GENERAL MANAGEMENT OF GLAUCOMA*

By LUTHER C. PETER, M. D.
Philadelphia, Pa.

IN RESPONSE to the call of your Chairman to contribute a paper to the program of your special section, glaucoma seemed to me to be the most urgent topic of the day for discussion. I fancy that no subject in our specialty has given us greater reason for serious thought, has received more attention, and at the same time is more baffling in its thorough understanding and its satisfactory treatment. For these reasons, therefore, there seems to be no occasion for offering apologies for discussing with you certain phases of the disease.

In a statistical review of private case records of new patients who consult me from year to year, more than 6 per cent of the total number are cases of glaucoma—a higher percentage, refraction excepted, than any other type of case but senile cataract. This is 4 per cent higher than that usually quoted in the literature. Hospital cases, institutions in which similar routine studies are made with a view to detect glaucoma in its early stages, yield similar statistics.

Aside from the frequency of the condition, there are other outstanding clinical facts which compel more conscientious study than is usually accorded the disease. The most important of these facts are: First, blindness is sure and beyond our control unless suitable treatment is instituted. Second, early diagnosis is imperative if one hopes to arrest the progress of the disease. Third, although there is a medical side to the general management of the condition, from the standpoint of our present knowledge of the disease, glaucoma is essentially a surgical condition, and must be met by surgical measures.

The first of these outstanding facts is so evident that it needs no discussion. The only comment which may be made in passing is that, although blindness is an inevitable result in untreated cases, glaucoma is a preventable cause of blindness in a large percentage of cases, providing the second and third parts of our subject are given due consideration.

It is not an unwise policy to be suspicious of every eye patient, forty years of age or older, until by careful study we can declare such patient free from glaucoma. In fact, the age limit should be made under forty. To this end, the first forward step in the detection of glaucoma in its incipiency is to make careful and searching studies of every patient at this time of life, when he presents himself for an eye examination for any cause. Unfortunately, when cases apply for help because of manifest subjective symptoms of glaucoma, the disease has been operative for five years or longer, and considerable damage has been wrought. If, on the other hand, we look with suspicion upon each case as it is presented, one is apt to detect the disease at a time when treatment can be of most good.

Routine attention should be directed, first of all, to a study of the pupils. The average patient at forty, unless myopic, should have a small pupil. A pupil of four mm. or larger should command our closest inspection. Is the anterior chamber of such a patient of normal depth? Does the fundus show any evidence of early cupping? Are the tonometric measurements within normal limits? Are the fields normal? These studies all fall within the range of what might be called a satisfactory routine method of examining a patient upon his first visit.

The anterior chamber may be normal in depth or shallow. This is largely influenced by the direction of the flow of the intraocular secretions. A fairly deep anterior chamber does not preclude the existence of glaucoma. A shallow chamber, on the other

* Presented on June 22, 1927, to the West Virginia State Medical Association at White Sulphur Springs.

hand, furnishes a suspicious link in the chain of evidence which may be gathered when symptoms are carefully analyzed.

Cupping of the optic disc is more convincing evidence, but its absence may be misleading. As a rule, when a definite glaucomatic cup is present, the disease is of long standing. In a careful routine fundus examination, which should be made in all eye cases, one can, as a rule, detect some evidence of beginning pressure. For this reason, fundus study should not only be routine, but every fundus examination should be made with care, and not in a perfunctory manner.

Tonometric studies deserve special consideration. There is a tendency on the part of some to feel that laboratory studies and modern technique can be carried too far in diagnostic methods. This protest is heard with the advent of every new instrument of precision. The tonometer has not escaped such critics. Finger tension should be acquired and practiced on all cases and may be a routine method in young subjects. The most refined manual technique, however, is inadequate to detect slight increase in tension, and should give way to the tonometer in all patients over forty years of age, and in younger subjects when there is a question of a possible increase of tension. I grant, unfortunately, that there may me much variation in tonometric readings, but such variation is due almost entirely to faulty technique. If one forms the habit of taking five or six readings daily, he will acquire a technique in which variation is reduced to a minimum. When other symptoms are doubtful, careful records of tonometric readings may be of great value in making a diagnosis. In my private practice and in hospital studies, tonometric readings are made on every patient over forty years of age.

There is another phase to be considered, namely, tension may be found within normal limits in many cases of definite glaucoma. How should such readings be interpreted? If glaucoma is definitely present, and the tonometric readings are within normal limits when taken, there is but one explanation. If there is cupping and visual fields show evidence of invasion, the tension must be high enough at some time during the day to produce such symptoms. It is more than likely that such increase in tension occurs at intervals and especially at night. The cardio-vascular system is at its lowest ebb during sleep. Lowered arterial tension admits of venous congestion and the intraocular pressure may be sufficient to bring about cupping and visual field changes. It seems hardly necessary to call attention to the number of patients who are awakened from sleep with attacks of acute fulminating glaucoma.

All these facts should receive their proper interpretation. They also confirm Dr. Elliot's contention that the diagnosis of glaucoma should only be made after studying each symptom individually and collectively. Regardless of the occasional discrepancies in our studies, the tonometer should be an instrument for daily use, and the findings should be properly correlated with other facts.

It is not my purpose to analyze each symptom in glaucoma, but the early as well as the late diagnosis of the condition would be incomplete without reference to the most diagnostic feature of the disease, namely visual field defects. Although every symptom is valuable in a final summary, the state of the visual field is the one fact by which can be determined the progress of the disease and the damage which the eye has sustained. In searching, therefore, for even minute defects, our methods can not be too refined or painstaking.

It does not fall within the purpose of this paper to discuss at length the character of, nor the reasons for, the various field defects observed. The field pathology is a result of progressive atrophy of bundles or groups of nerve fibers which successively yield to the pressure and stretching process. Where this process begins is determined by the weakness of the cribriform membrane and the direction of entrance of the optic nerve. The important fact to determine in an individual case is, what part of the field shows evidence of invasion. Much stress is laid upon peripheral contraction. In a majority of instances, this is a late phenomenon. The

Roenne step, as I have pointed out in a former paper, read before the College of Physicians of Philadelphia, is exactly the same form of bundle atrophy which is found as a rule in the Central zone, known as a Bjerrum scotoma. While its presence does not immediately threaten invasion of macular vision, it nevertheless is an indication that the process is under way, and measures should be instituted to arrest the progress of the disease. In the detection of this symptom, great care should be observed in working out the angular defect which usually develops in the nasal fields along the raphe. When indifferent methods of field taking are practiced, this step-like defect may be entirely overlooked, and the moderate degree of contraction may be regarded as practically normal. If the step defect is definitely outlined, it furnishes the operator with the most favorable positive evidence of pathology.

Of greater import and more serious in prognosis is invasion of the central field. In my judgment, any field defect is an indication for surgical intervention. If the first indication develops in the peripheral field in the form of a Roenne's step, the prognosis following operation is more hopeful, because the central field has not suffered. As a rule, peripheral loss is not an early but a late phenomenon. In most instances, a defect in the intermediate zone is first to make its appearance. As this area is in close contact with the macular fibers even a minute area of atrophy may rapidly encroach upon central vision. The early recognition, therefore, of central and intermediate invasion is of utmost importance. The area in which such defects are most apt to appear lies between the tenth and twentieth degrees. The soctoma may begin as an enlargement of the normal blind spot of Marriott, or it may appear in a detached area in any part of this circle. It is safest to explore every part of the field within twenty degrees of fixation.

The usual methods employed in perimetry are not sufficiently refined to uncover an early Bjerrum scotoma. For this purpose the perimeter must give way to some form of tangent screen, and the method should be called campimetry. In an average patient, a white test object subtending an angle of from five to ten minutes is necessary. A stimulus of this size will usually uncover the very earliest evidence of an area of lowered sensitivity. A red or green stimulus of one-half degree is of equal value, and in some instances more delicate in eliciting the first evidence of invasion. The time element is important and patients are entitled to our time when they entrust themselves to our care for study. Every effort should be made to uncover the first evidence of visual field loss, because experience teaches us that the patient's future depends upon prompt treatment.

Treatment. In the general management and treatment of glaucoma, there are diversified views. Some believe that they accomplish the greatest good for the largest number of patients by the use of miotics and other suitable medical treatment. Others believe that neither miotics nor surgical intervention can prevent the inevitable blindness which unfortunately does occur in a large number of cases if patients live long enough. Personal opinion is based largely upon personal experience. In giving expression to my views on the general management of this disease, I do not wish to make converts of those whose views may differ from my own. My views are based on personal experience, and I find in the literature others who believe with me that glaucoma is a preventable cause of blindness. It is evident that we fail in many instances, but these exceptions occur in patients who have suffered from the disease for many years, and operation is performed as a last resort. In my early training, I was taught that glaucoma was a medical condition which required medical treatment, and that operation was a last but almost equally hopeless resort in staving off the inevitable blindness if the patient lived long enough. The possibility of carrying exceptional patients through eight or ten years of fair vision was pointed out, but no comment was made upon the great number of patients who gradually but surely lost their sight during the same period of time by this method of treatment. By degrees this

erroneous conception of the disease was corrected and today I am fully convinced that glaucoma is essentially a surgical condition from the very beginning. It is a matter of judgment at least when the medical phase ends and the surgical stage begins.

In young subjects, patients under sixty, it is a safe rule to operate when the first field disturbance can be definitely determined. In older subjects, age, the extent of visual field disturbance, and the rapidity of progressive field loss, as well as the proximity of the Bjerrum scotoma to the point of fixation, are all factors which must be considered. In some instances, miotics may carry patients through to the end of their days, and such patients may be spared the necessity of an operation. In the young subject and in some of our older patients, on the other hand, the withholding of surgery is responsible for a fatal issue in a majority of instances. Surgical relief must be proffered before encroachment upon the macula is imminent. If this rule is followed, many young subjects can be carried to mature age with useful vision.

The type of operation which is apt to yield maximum results is one of a number in which filtration is the underlying principle. The varying types of the modern iridectomy all attempt to add to the iridectomy of the older type some form of filtration. All these modern forms of iridectomies retain the disadvantages and the dangers of the conventional broad iridectomy. Some of them are probably more enduring in holding the visual field than the usual classic iridectomy, but they do not compare in efficiency with trephining, the La Grange, or other types of filtering operations. Iridectomy has its appropriate place in the surgery of glaucoma. If limited to the acute inflammatory types when surgery is called for, it is not disappointing, and may save the field at least temporarily. In some instances, it may preserve vision for indefinite periods. In a much larger number of cases, it affords but temporary relief. Only a careful study of the visual field can determine its value in a given case.

In glaucoma simplex and in the inflammatory types, during a quiescent period, one of the more modern filtering operations becomes the operation of choice. A follow-up system covering a period of thirteen years is convincing to me that this type of operation, and especially that of trephining, offers to the glaucoma sufferer a fair degree of assurance that useful vision may be preserved for indefinite periods. One of the gratifying experiences in practicing trephining was well expressed by a recent writer, in which I can fully concur. Even though patients become careless and fail to report for a period of six months or a year, one can rest assured that little change in central vision or in the visual field will be found when they do report for examination.

Although it was not my purpose to speak specifically of any definite surgical procedure, I find it difficult to write or speak on the subject of glaucoma without injecting my thirteen years of happy experience with the Elliot trephining operation. The thought, however, which I wish to leave with you is of greater importance. It is this: In the light of our present knowledge, the disease is a surgical one. If met by surgical measures, the outlook for the future literally and figuratively will be much improved.

CHRONIC PROGRESSIVE DEAFNESS*

By J. E. McKENZIE, M. D.
Beckley, W. Va.

THERE is no more troublesome condition in life than a partial defect in hearing. There is no more disastrous condition than a deafness which eliminates a person from the intellectual companionship of his fellows.

In order to understand the factors upon which hearing depends and thus be able to make proper hearing tests, one must grasp the essential ideas of the hearing mechanism. Sound waves are conducted through the auditory canal to the drum through which they are transmitted. The vibration of the

* Read before the Raleigh County Medical Society at Slab Fork, July 28, 1927.

drum sets up like vibration in the ossicles, the malleus, incus and stapes. These waves set in vibration the foot plate of the stapes, which moves freely by means of the annular ligament. Such waves of sound are thus conducted to the internal ear—the cochlea, where a proper interpretation of them is sent to the hearing center in the brain through the auditory nerve.

Hearing depends upon two factors: the proper conduction of sound waves and the proper perception of sound waves.

The stability of the mechanism depends upon an equalized air pressure behind, and in front of the drum. Air reaches the outside of the drum through the ear canal; it reaches the inside through the Eustachian tube. This equality must always be maintained as any interference with it may result in deafness.

It has been demonstrated that 90 per cent of cases with defective hearing have or have had trouble in the middle ear. In other words, that the trouble has occurred in the sound conducting mechanism.

Too little attention has been paid to the etiological factors and chronic otologic conditions which bring about deafness in later life.

Of most importance in childhood, is the prophylaxis of the nose and throat; the removal of tonsils and adenoids; the care of suppurative and non-suppurative conditions of the ears during and after acute exanthematous diseases. Systemic factors such as the nervous system, gastro-intestinal tract, focal infection and the endocrine system are sometimes too little stressed.

If the child's health is up to par it is a simple matter to keep its nose and throat clean. Children with rickets or some other devitalizing disease must receive general treatment along with local treatment. The general health brought up to normal, it is a simple matter to keep the nose and throat free from the accumulation of mucus which tends to an engorgement of the Eustachian tubes. Instillations of a mild alkaline solution followed by drops of some soothing oil like liquid petrolatum will ward off many an inflammatory condition and may be the means of avoiding a deafness later in life.

Of most importance is the removal of tonsils and adenoids. Hayes[1] says: "The removal of tonsils, whether they show apparent disease or not, is always a necessity when there is defective hearing." It is impossible in many cases to say when a tonsil is or is not diseased, for when tonsils appear to be normal their removal has hastened the arrest of the hearing defect. Not many adults suffer from adenoids but a thorough examination should be made and any remnants of lymphoid tissue should be removed. Many cases of tinnitus are cured and hearing may be improved by this procedure.

One should not be content with clearing up the discharge in suppurating ears but the hearing should be tested and brought back to as near normal as possible. These are conditions which can be easily remedied at the time but which are sure to leave their mark later on, if neglected.

The nervous system effects the hearing of some individuals as was demonstrated by a patient of mine. His hearing has always been worse following an important business engagement, and improves with rest.

Toxic absorption from the gastro-intestinal tract and focal infections such as abscessed teeth are in many cases responsible for tinnitus and deafness.

Local treatment of progressive deafness is directed first to the Eustachian tubes. In the majority of instances there is some pathology at the mouth of the tube or in the tube itself. Oftentimes one sees an edematous condition of the tube due to local irritation. If the tube itself has become severely inflamed, very little can be accomplished by the ordinary politzerization. The inflamed condition may be alleviated by the application of a silver solution made by direct inspection with the nasopharyngoscope. In a majority of cases, one has to deal with a pathological condition of the Eustachian tube which causes a diminution of its caliber. The stenosis is caused by an inflammatory condition of the mucosa which is apparent in the isthmus. In all cases an attempt is made to get air into the middle ear by mild politzerization after shrinking the inlet of the tube with cocain and

adrenalin. If no air reaches the middle ear a suitable olive-tipped bougie may be passed through the Eustachian catheter into the tube to determine its condition and produce dilatation.

The condition of the drum must be determined by inspection and its excursions minutely noted. The adherent or thickened drum which will not allow of proper excursions may be made to function properly, sometimes, by massage with the otoscope. There are certain electrical adjuvants which are being used in the treatment of progressive deafness. Vibrators, diathermia, X-ray, and ultra-violet ray have been employed by different otologists. I have used a Kloman vibrator but have failed to note any permanent benefit.

Diathermia and ultra-violet rays have a stimulating effect upon deep seated tissues and it seems to me ought to be beneficial in conditions of middle and internal ear. X-ray and radium have given favorable results in the hands of some, while Hayes[1] reported no improvement in patients treated with X-ray in his office.

The results of treatment depend upon the stage of advancement of the condition. Those who are just beginning to get deaf will notice an improvement after a few treatments. Patients who are moderately deaf will show improvement when focal infections and irritants are eliminated, and treatment continued. Patients who are severely deaf can expect only a transient improvement from treatment.

CONCLUSIONS

1. For successful treatment both general and local etiological factors must be eliminated.

2. The tonsil is the principal factor.

3. Inflation and tubal dilation is the most useful treatment.

4. Mechanical and electrical adjuvants may have some value.

REFERENCE

[1] Hayes, Harold: Rational Therapy in Progressive Deafness, Ohio State Medical Journal, September, 1924.

ABSTRACTS

Hodgkin's Disease

(Russell S. Boles:
Illinois Medical Journal. 52:112, August, 1927)

The features which make the following case report worthy of record are the vague initial digestive symptoms, the difficulties in diagnosis, and a fairly detailed pre- and post-mortem record.

The author reports the clinical course and post-mortem findings of a patient with Hodgkin's disease, in whom the first symptoms were apparently due to primary involvement of the retroperitoneal glands. The subjective symptoms were strongly suggestive of duodenal ulcer. Although physical examination of the duodenal ulcer patient is usually negative except for frequent morphological characteristics, the patient described had a distinct, nodular, firm, slightly tender epigastric mass, and evidence of mild liver enlargement. The pre-operative diagnosis was retroperitoneal sarcoma. At operation, five months from onset of symptoms, a retroperitoneal mass had pushed the liver and stomach forward causing some obstruction at the duodeno-jejunal junction, which it was felt accounted for patient's early digestive symptoms.

Deep X-ray therapy was used in treatment. Three months subsequent to operation, cervical axillary and inguinal lymph gland enlargement was first noted, at which time there were swollen, tender, aching, stiff knee and ankle joints. He had also had swollen and stiff hand and wrist joints one month prior to initial digestive symptoms. Six months after operation, tonsil-

lectomy was performed, but no bacteriological or histological examinations were made of the tonsils although the author states that such examinations might have proved interesting because of the possibility of the tonsils being the original portal of entry for an infecting agent.

Post-mortem examination revealed a liver 25 per cent above normal weight containing histologically "densely interwoven delicate fibrous strands in which lie great numbers of large multinucleated giant-cells (Dorothy Reed cells) . . . . in many places tongues of liver tissue extend into the granuloma." The spleen showed chronic hyperplasia and fibrosis. There was tuberculous cavity formation at the right apex of the lungs with broncho-pneumonia.

It is unfortunate that a more definite relationship between the diseased tonsils, the arthritis, and the lymphomatosis was not established. The evidence as presented is only suggestive. The arthritis and tonsillitis might well be considered merely as associated conditions rather than manifestations of the same process which gave rise to the lymphatic gland enlargement. Chronological tables of the blood counts and chemistry, and omission of the summarizing front sheet of the autopsy record might have simplified the presentation. —M.C.B.

Corrective Exercises in Ptosis

(J. Blair Fitts, M. D., Richmond, Va. Virginia Medical Monthly, August, 1927)

Fitts mentions the two distinct types of ptosis, congenital and acquired. The acquired is divided into (1) post-operative, (2) post-partum and (3) following prolonged illness. In the congenital type belong the thin, narrow-chested, non-athletic individual whose sole desire is to lie down and rest after the slightest exertion. This desire for recumbency as a means of relief Fitts believes is of itself sufficiently suggestive of the correct form of treatment and quotes Waggoner's theory of increase negative intra-abdominal pressure in the splanchnoptotic in the erect posture, returning to normal when recumbent. The numerous symptoms these patients complain of is explained as being due to this increase in negative abdominal pressure. The treatment is increase abdominal tone by exercises directed to the abdominal muscles and correct the posture and strapping the lower abdomen.

To prevent the post-operative type of ptosis Fitts advises abdominal exercise to begin at six to eight weeks following all laparotomies and continues for at least six months. Support may be used at the same time if desired. During and following childbirth the average woman needs toning up of her abdominal muscles to aid her in delivery and take up the slack after delivery. After delivery especial attention should be paid to support and exercise. After prolonged illness there is a loss of fat and muscle tone. Great care should be given to properly support the abdominal muscles when the patient is allowed up in chair and allowed to walk.

The more universal use of muscle exercise and recumbency and abdominal support will make for fewer dissatisfied patients.

—E. B. H.

Medical Practice Act

(*Reeves v. State* (*Okla.*), 255 *Pac. R.* 162)

The Criminal Court of Appeals of Oklahoma, in affirming a conviction of defendant Reeves of practicing medicine without a license, says that the information charged that he practiced medicine by injecting a preparation of arsenic as a treatment for syphilis into the veins of a certain patient. The record disclosed that he operated a sanatorium; that the patient named went to it, was examined by the defendant, and was informed that she had syphilis; that he undertook to treat her, and injected the drug into her arm as charged. There was sufficient competent evidence reasonably to sustain the allegations in the information. It is well settled that where there is competent evidence, although it may be conflicting, reasonably tending to sustain the charge, the court should not sustain a demurrer, but the question of fact should be submitted to the jury, and its verdict will be binding.

There was some contention made that the trial court admitted incompetent evidence. This was directed to evidence that the medical treatment given by the defendant was not a proper treatment, and that the evidence was not confined to the particular day alleged. This matter presented no such error as would in any manner tend to bring about a miscarriage of justice or that deprived the defendant of any substantial right. An error in the admission of evidence does not require a reversal, unless such error probably resulted in a miscarriage of justice or deprived a defendant of some constitutional or statutory right.

The information charged a violation of the law in a particular manner by the injection of a. drug into the veins. The instructions told the jury that it must find the defendant guilty as charged before it would be warranted in returning a verdict against him. There was evidence of only one offense as charged by the injection of a drug, and, while there was evidence of things done at other times by the defendant tending to prove a practice of medicine in a different manner, none of them referred to the practice of medicine by the injection of a drug into the arm as charged in the information. These other matters referred to simply tended to cast light on the offense charged, and for this purpose they were admissible. Where evidence tends to cast light on the guilt or innocence of the defendant of the offense for which he is on trial, it is admissible although it may tend to prove him guilty of some other offense.

The medical practice act (chapter 59, session laws of 1923) is not in violation of any provision of the state constitution. The defendant contended that it is unconstitutional under the authority of *Ex parte Pope* (Okl. Cr. App.), 242 Pac. 290. This contention was fully considered in the case of *Reeves* v. *State* (Okla. Cr. App), 253 Pac. 511, and decided adversely to the contention here made. It was also argued here that the act is unconstitutional under section 57, article 5, of the constitution, because the title of the act is insufficient, but that contention cannot be sustained.—*J. A. M. A.*

German Anesthetics

The development by German scientists of three new anesthetics is reported from Berlin by the American Trade Commissioner there, William T. Daugherty. German scientists, he states in his report to the Department of Commerce, in their search for improved anesthetics that do not have to be administered through inhalation, have developed these narcotics. They are continuing their research, he stated. He describes the new anesthetics as follows:

E 107, known also as Avertin, owes its existence to Willstaedter (Munich) and Sauerbruch (Berlin) and is produced by Willstaedter and Duisberg of I. G. Farbenindustrie A. G., Frankfort on the Main. It is a tribromal-alcohol, producing narcosis through the intestines.

Another new anesthetics is so-called Pernokton, reported by Professor Dr. Bumm at the recent surgeon's congress in Berlin. It is related to Veronal and is injected into the veins, thus reaching sensitive parts through the blood circulation.

Lumbaranesthesia is another that is administered through the spinal cord and is capable of anesthetizing the lower half of the body particularly, but this form of taking is reported not altogether harmless.—*U. S. Daily.*

Recent Consolidation

The consolidation of the Powers-Weightman-Rosengarten Company of Philadelphia with Merck and Company of New York City has recently been announced. Rahway, New Jersey, will be the headquarters of the consolidated companies to be known as Merck and Company, Inc. The consolidation took place on July 1, 1927.

The Powers - Weightman - Rosengarten Company with their product, "Stovarsol," has long been an advertiser and staunch supporter of the *West Virginia Medical Journal* and we take this opportunity to wish their splendid corporation every success in its new venture.

THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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EDITORIAL

The Message of Medicine

A new method or plan of getting the message of scientific medicine across to the lay public has been recently worked out by the Committee on Public Relations of the West Virginia State Medical Association. The plan is unique in every respect and deserves the whole-hearted support of every member of the state society.

According to Dr. J. R. Shultz of Charleston chairman of the professional relations committee, the new method embraces every luncheon club in West Virginia and the message of scientific medicine will be "put over" by some twenty or thirty "doctor speakers" in the state association. The business of recruiting these "doctor speakers" has already been started and is meeting with splendid success.

According to details already worked out, each luncheon club program committee in West Virginia will shortly be notified that our state medical association has available for duty a number of excellent after-dinner speakers whose services can be obtained for the asking. The notification will set forth that the speakers have already prepared talks on the relation of the physician and the public and will ask that all requests for speakers be sent to the executive secretary at Charleston.

It is the hope of the committee on professional relations that about twenty-five speakers can be obtained in the medical ranks and that they will be located in the various cities and towns throughout the state. When this is accomplished, if a request for a speaker is received from the Spencer Rotary Club, a speaker from Parkersburg will be notified to attend; if from Princeton, a speaker from Bluefield will be notified to attend; but never, according to Dr. Shultz, will a speaker be allowed to talk in his own home city.

The results to be accomplished from such a plan are two-fold. In the first place the message of medicine to the lay public will be handed out to select audiences throughout the state. In the second place, the newspapers that cover the luncheon club meetings will carry the message in their columns the next day to their general readers. Surely such a plan should be given the unqualified support of the members of the association. —C.A.R.

Apologies

The Editor regrets very much the fact that the "Koch Cancer Foundation" notice appearing on page 500 of the September issue got away from his desk and into the hands of the printer without the article of criticism which was to follow along the lines of the "Fake Radium Jars" as quoted from *Hygeia*. Since the many friendly "roastings" we have received, we are convinced all our readers eminently capable of criticising Dr. Koch, and anything we say at this time would be superfluous, and we tender our profuse apologies. —C.A.R.

More Subscribers

The *West Virginia Medical Journal* has recently opened a campaign to increase the number of subscriptions to 1500. When this figure is reached, the Cooperative Medical Advertising Bureau of the American Medical Association will automatically advance the advertising rates in our journal and we can profit to the extent of enlarging our publication and of making it more attractive to the members of the West Virginia State Medical Association.

It has occurred to the members of the publication board of the *Journal* that our monthly publication should be of more than ordinary interest to the drug store proprie-

tors throughout the state. We have, therefore, launched the campaign in that direction and have sent our letters to every drug store in West Virginia calling their attion to the journal. We believe that with a little active cooperation on the part of the members of the association, we will be able to increase our circulation at least 100 from this source alone.

A favorable word from you in regard to the journal to your favorite druggist will accomplish more than a bale of circular letters. —C.A.R.

Death Rate Increase

The West Virginia mortality statistics for 1926 have just been released by the department of commerce at Washington. The 1926 death rate was 1,087 per 100,000 population as compared with 1,047 in 1925. The increase is accounted for in the death rates from influenza (from 24 to 45 per 100,000 population) measles (from 3 to 16) and whooping cough (from 11 to 18).

Decreases in 1926 are shown in the death rates from dysentery (from 13 in 1925 to 2 in 1926 per 100,000 population) diarrhea and enteritis, under 2 years (from 82 to 75) and typhoid and paratyphoid fever (from 20 to 17).

Among the more important causes of death in West Virginia in 1926 were tuberculosis, 1,278; heart diseases, 1,864; pneumonia, 1,387; diarrhea and enteritis, 1,465; nephritis, 1,126; congenital malformations and diseases of early infancy 1,387, cancer and malignant tumors, 918; cerebral hemorrhage and softening, 965, and influenza, 749.

West Virginia Cripples

Approximately 175 cripples of working age are rehabilitated in West Virginia each year through the cooperation with the Federal government. They are visited by special agents and advised and assisted in regard to vocational training and placement in positions especially suited to them. This work is accomplished at an aggregate cost of about $30,000 each year, about one-half of which is allotted to West Virginia from the United States Treasury.

Perhaps no work in the state makes stronger appeal to the public than this special service to the unfortunates, although the work has been done quietly with but little advertising. The service is directed by J. F. Marsh, secretary of the state board of education, and John C. Shaw of Wheeling and O. A. Watson of Buckhannon as special field agents. The director or agents will be pleased to give attention to any case of one who is permanently handicapped and is of working age and capable of taking training for productive work. Your special attention is directed to a recent report on this subject including a study of the blind adults of the state issued by the state board of education, Charleston. Copies of the bulletin and forms may be had on inquiry. —J.F.M.

International Relations

The cordial relations of the physicians of America, North and South, and their colleagues of the Old World were further expressed by the appointment of American representatives to the editorial cabinet of the Acta Dermato-Venereologica published under the direction of Dr. John Almkvist of Stockholm, Sweden. The nominees are: Howard Morrow of San Francisco, Howard Fox of New York, J. B. Shelmire of Dallas, D. R. Smith of Toronto, Pardo Castello of Havana, and Herman Goodman of New York.

The Acta Dermato-Venereologica publishes original contributions in French, German, or English within the fields of dermatology, urology, and social hygiene, and items of interest of persons or progress in these specialties.

American literary contributions should be addressed to Dr. Herman Goodman, 18 East 89th street, New York City.

COMPONENT · SOCIETIES

Fayette County

The physicians and surgeons of three counties were present at the regular monthly meeting of the Fayette County Medical Society held on the afternoon and evening of Tuesday, August 9, at the McKendree Hospital, McKendree, W. Va. The afternoon was spent in a tour of inspection of the hospital and farm conducted by Dr. M. V. Godby which was followed by a dinner served by the hospital staff.

The scientific program, which followed the dinner, was in charge of the Mountain State Hospital of Charleston. Dr. R. A. Walker read a paper on "Industrial Medicine and Surgery" and Dr. C. A. Lambert talked on "X-rays as an Aid to the Diagnosis of Pulmonary Tuberculosis." Doctors were present from Raleigh, Fayette and Kanawha counties and an active discussion followed the two scientific papers.

Members of the staff of the Kanawha Valley Hospital, Charleston, put on the program at the September meeting of the Fayette County Medical Society which was held in the First Methodist church at Fayetteville. The address of welcome to the society was delivered by Mr. J. R. Mahan of Fayetteville and Dr. J. D. Grose of Fayetteville welcomed the visitors from Kanawha county. Before the meeting was called to order by the president, Dr. H. A. Walkup, a splendid chicken dinner was served in the basement of the church.

The program opened with a paper on "Breast Tumor," by Dr. J. Ross Hunter of Charleston, which was discussed by Dr. W. R. Laird of Montgomery, Dr. W. A. Thornhill of Charleston and Dr. G. C. Schoolfield of Charleston.

Dr. D. H. Hill of Charleston presented a paper on "Blood Count in Appendicitis," which was discussed by Dr. A. L. Morris, Dr. Hunter and Dr. G. G. Irwin of Charleston.

Dr. G. C. Schoolfield of Charleston talked informally on "Uterine Hemorrhage" and the discussion was carried on by Dr. Thornhill, Dr. G. G. Hodges and Dr. S. W. Price.

A paper on "Toxic Thyroid" was given by Dr. E. Fred Gott of Charleston and it was discussed by Dr. Laird, Dr. J. M. Spinks and Dr. Hodges.

Dr. W. W. Point of Charleston read a paper on "Hospital Obstetrics" which was discussed by Dr. M. A. Moore, Dr. Hodges and Dr. Schoolfield.

Dr. G. G. Irwin of Charleston gave a paper on "Significance of Blood in the Urine" which was discussed by Dr. E. E. Jones and by Dr. Hunter.

A paper on "Ear Infections" was given by Dr. O. H. Bobbitt of Charleston and was discussed by Dr. G. A. Smith of Montgomery.

Dr. C. A. Ray of Charleston, manager of the Kanawha Valley Hospital and president-elect of the West Virginia State Medical Association, spoke briefly on "Pain in the Upper Abdomen" which was discussed by Dr. M. E. Caldwell.

A large attendance turned out for the Fayetteville meeting, which was considered one of the most successful of the year. At the close of the meeting, Dr. G. L. Morris of Jodie introduced one of his patients who was suffering with pellagra. Dr. Morris said it was the first case of its kind that had ever come to his attention.

G. A. SMITH, M. D., *Secretary.*

Marshall County

Dr. D. B. Ealy of Moundsville has been appointed as secretary of the Marshall County Medical Society to fill out the unexpired term of Dr. D. Berman, who recently moved to Victoria, B. C., to accept an appointment with the health department there. The appointment of Dr. Ealy was made by the president of the society, Dr. J. A. Striebich, at a meeting held in Moundsville on Tuesday evening, September 13. Dr. Ealy will serve as secretary of the Marshall County Society until December, when the annual election will take place.

Barbour-Randolph-Tucker

A symposium on infantile paralysis featured the September 21st meeting of the Barbour-Randolph-Tucker County Medical Society held at Elkins, W. Va. The meeting was preceded by a supper at 6:30 o'clock at the Hotel Tygart and the session was presided over by Dr. E. M. Hamilton of Belington, president of the society.

The program was opened by Dr. T. P. Haslam, who spoke on etiology and pathology. Dr. S. G. Moore of Elkins spoke on symptoms, Dr. O. L. Perry of Elkins on prophylaxis, Dr. C. H. Hall of Elkins on medical treatment and Dr. B. I. Golden of Elkins on surgical treatment. A general discussion followed in which all of the society members present participated.

J. C. IRONS, *Secretary.*

Vegetarian Folly

Vegetarianism is nothing more than a burlesque, says Dr. Frederic Damrau, writing in *Hygeia* for September. The person who makes the sweeping assertion that all animal foods are injurious is simply airing his lack of technical knowledge.

From the health point of view the arguments in favor of vegetarianism are as meaningless as a cigarette advertisement. Their premises come chiefly from the fertile field of medical fiction. The various arguments urged in favor of this fad are based on half truths or misunderstood theories.

The fact that meat sometimes contains dangerous parasites is no reason for not eating meat, as with careful food inspection and thorough cooking of meat, all danger from parasites is eliminated. While some primitive men live on an exclusive diet of vegetables, others apparently just as healthy live entirely on meat. Even civilized man can change to a meat diet exclusively without suffering in health, as was proved by the arctic explorer, Vilhjalmur Stefansson.

What mankind really needs is a well rounded diet using the greatest possible variety of all foods. No single article of diet can be considered intrinsically beneficial or injurious. What the outraged human stomach would beg for, if consulted, would be the abolition of all food fads, surmises Dr. Damrau.

Sparrell S. Gale, M. D.

Word has just been received here of the death of Dr. Sparrell S. Gale, of Roanoke, Va., who succumbed on August 19, at the age of 51 years, from intestinal paralysis. Dr. Gale graduated from Columbia University College of Physicians and Surgeons in 1921, and was medical director of the Lewis-Gale Hospital at the time of his death. The deceased attended the last annual convention of the West Virginia State Medical Association at White Sulphur Springs, where he read a paper on "The Surgical Treatment of Pulmonary Tuberculosis," soon to be published in *The Journal.*

Nevada State Meeting

The twenty-fourth annual session of the Nevada State Medical Association was held at Bowers' mansion on September 23 and 24, 1927. Headquarters for the meeting were established at the Hotel Golden at Reno. One of the best meetings in the history of the Nevada society was reported.

GENERAL NEWS

Infantile Paralysis in Wheeling District

There is a good deal to think about in the case of "infantile paralysis", or, "acute poliomyelitis," and nowhere have we seen a better paragraph than that of Dr. Frances W. Peabody.

"Acute poliomyelitis is an infectious disease which constitutes a problem of increasing importance for the medical profession. While the last thirty years have witnessed an extraordinary decrease in the incidence of such infections as smallpox and typhoid fever, the same period has seen poliomyelitis develop from a condition occurring sporadically, or at most in small groups of cases, to an epidemic scourge of world-wide distribution. Recent experience moreover must inevitably lead to the belief that poliomyelitis either in endemic or epidemic form will in all probability remain a grave menace until adequate methods of combating it are devised.

At the present time there is no indication of any permanent disappearance of the disease but on the contrary a rather definite tendency to its recurrence in epidemic form with more or less regular periodicity. From the point of view of the community the comparatively high mortality of poliomyelitis is in reality of less importance than its economic and social problem involved in the care of cripples which result from it."

As this writer attempts to describe the situation as he happens to know it here in Wheeling he cannot but revert back to the beginning of medicine and conjure up the dismal hour when the fathers of his profession started out with what courage they could summon, and calling too for guidance and understanding, in the great aching void, saw nor heard nothing. That is the keynote of this very song in Wheeling here today—the feeling for something to diagnose the presence of the malady and what is more reaching for a means to prevent it. It is a baffling thing. A trying and an insidious, creeping reptile like infection. As you tread merrily out into the woods you are suddenly aware a quickly moving "crotalian" has stung you—perhaps mortally and in the case of acute poliomyelitis you have a happy child one day and perhaps in a short brief span—a cripple. Yet it is rather a happy thought to realize that you and all your colleagues have a feeling that this disease like the others will sooner or later be absolutely conquered. It is a far happier thought to realize the public looks to the profession to do it too. So great is their confidence they wonder why it is not here now. It is for this reason we all feel humiliated to have to answer how little we know. For that is the way it stands. We tell them it is up through the naso-pharyngeal space the disease probably enters. We advise some argyrol up their nose and a mouth wash. They are not altogether satisfied with that. It is a sign of the times to note that some almost demand a serum and can't understand why we do not have it. We can't tell them that much may depend on their choroid plexsus for even that is problematical. The health officer here seems to see an analogy in the way it behaves like that of measles in many of its phases. From what this writer has in his limited manner picked up he still believes there is some unknown factor of transmission about acute poliomyelitis that has never been partially conceived. He feels that way about the other diseases of measles, chicken pox, and influenza and perhaps whooping cough too. It is quite true Wickham in 1905 seemed to clearly show that it is by direct contact and here in Wheeling in this epidemic Dr. McLain by isolating 26 contacts in the case of a child which had played with them while

infected succeeded in having none of them develop it yet there still lurks the suspicion in most men's minds that something seasonal or atmospheric, or air laden or in relation to insects that makes it so disquietingly break out now here and now there.

It has had no satisfactory symptoms. A fever of 101 to 103 degrees—the so-called "bilious attack" in many, here and there a sore throat, a slight but far from marked stiffness in the neck, in most constipation and the two mental extremes—dullness or being exceptionally bright.

By knowing its presence in the community local men have learned to strongly suspect it when a combination or part of these occur and yet we are all free to confess that until a hyperaesthesia or a paralysis occurs we cannot be sure. There it stands. Naturally the outcome has been that every sick child in Wheeling today is under suspicion until he or she gets well. No doubt there are many who never develop a paralysis and these probably have a hand in spreading the disease. This writer had a child who was upstairs over a family with another who ran a similar course. Constant observation as to reflex activity was made. The parents cooperated in being on the constant lookout for paralysis. The child cleared up. The one below developed poliomyelitis. We feel that ours had the disease but happened by some developed immunity to escape paralysis. The cases have been diagnosed and placarded up here as poliomyelitis only when they showed up with paralysis.

We have been struck with its tendency to strike into the homes of those whose standard of living are high while it seems to have neither flourished nor spread in the crowded districts whenever it has so appeared although if the direct contact idea is altogether correct there is where it certainly should. The cases here have been curiously wide apart and as we gaze on the addresses of the nine cases in today's bulletin we see that only two of them are approximated by less than one-half mile. In fact they actually mark off the city's boundaries for its upper half. Say what you will this is a peculiar and compelling behavior. Most of the cases of paralysis have been in the legs but one occurring in the home of the brother of Dr. McLain, with what to us is the sardonic irony of life, has very seriously affected the chest, and larynx. In the 1916 epidemic we had one of this form that had probably one of the worst dyspneic conditions we have ever seen. Was paralyzed for three months and eventually recovered.

As a real matter of fact Wheeling has no epidemic of poliomyelitis in the true sense of that term. It began on the Ohio side in Martins Ferry and obtained a very good foothold as it nearly always does until the true nature of the epidemic is, by the resulting paralysis, made out. Some families over there very promptly crossed the river and settled in Wheeling. As usual a little criticism wafted back and forth and we saw an item in a Martins Ferry paper which imparted to the denizens of that besieged city the intriguing news that their medical fraternity had been enlisted to show their West Virginia colleagues the paths they best had trod. Wheeling is not as yet like Huntington—the river still makes a lot of difference. Cases began to sporadically occur in Wheeling—so far we believe the total has been 19 with two deaths. The treatment has been symptomatic and the only serum used has been Lilly's, which is streptococcic. The agent for this locality for that firm has imparted to us that it has been very successful in several cases (he gave us the names) in Martins Ferry even aborting the paralysis after they had signally progressed. The supply ran short and we have heard little of it in Wheeling.

You will notice Peabody said "will in all probability remain a grave menace until adequate methods of combating it are devised". Here is where Wheeling points as they say with "pardonable pride". We had the "adequate means". The adequate means was a courageous health officer. We are not a press agent for Dr. W. H. McLain. We recognize that he has peculiarities like we all have in some form which are bound to make him some enemies. And these enemies whoever they are have doubtless some reasonable side to their arguments. But if we ever see a health officer with no

enemies, we will at once advise (if we are asked for our views) that on that evidence alone he be promptly fired. A health officer requires three qualities — a good medical education, executive ability and lastly but by far more important than either of the others—courage. This time the courage was required to be exhibited against the citizens of another state. Dr. McLain, although a severe disciplinarian, has the city very well with him for the most part. He promptly called the state health commissioner and Dr. W. S. Fulton of this city and insisted on a quarantine against children coming in from Ohio. This took the state police—and there they are at the end of the bridge. Next the United States health department was brought into the matter and it very handsomely backed up his efforts with nothing further to add.

Wheeling therefore has the spectacle of the state police guarding her avenues of entrance like the old cities of ancient times had their draw bridges. No children from Ohio are admitted nor those from here allowed to leave. We are going to have a state fair. Thousands of dollars are involved in contracts. No fair—people are paid the same and yet the chief mover, Mr. George Hannan, came and offered to close it up. Through the decision of Dr. Henshaw, Dr. McLain and the United States health department it was allowed to proceed with no children. Children are for the most part being kept within their own homes. A good civic cooperation is present. Compare this situation with the well known one in Isben's masterpiece of "An Enemy of the People" where the physician was broken on the wheel for telling the watering place inhabitants the springs water contained a microorganism. That will indicate to you how far the medical profession (for it is it that has alone done it)—has brought health control in civic matters. This is the true function of a health department, and when they assume to treat and cure they are unqualifiedly astray. The newspapers of this city have been a great factor in handling the matter. Each day they are called and given the facts as they are. They publish the exact number of cases and where they are as well, together with any new instructions for the public at large. We were in the office when a reporter of a newspaper which had inadvertently published 43 cases in the Wheeling district was told there were not ten in Wheeling. Wheeling district as you know takes in over 200,000. Retraction and correction were promptly made. We are giving all these facts because it shows conclusively that a health officer is or must be a man of parts. It is useless for any community to put in a jelly fish for a health officer. To make a city like Wheeling walk the line putting up with inconvenience and a little hardship is to us a first class job and requires a high type of courage and executive ability. Any faltering and the whole card house comes down. After all we believe health officers are born, not made. What is the result? Infantile paralysis has appeared in every part of the city and yet the total is 19 with two deaths. There are ten now under quarantine and so far as we know no new cases. This in the face of no first class treatment for the malady such as we have in diphtheria. Every city and town in West Virginia should look at their health officer, and make up their minds if he has courage and executive power. It is about the only thing that we have in this condition between a scourge and security. Physicians are handling their cases in this matter so hazy with admirable competence. One cannot but grow proud over his profession's ability to make the best of an unsatisfactory condition as regards diagnosis and antitoxin yet there are surprisingly few cases of pronounced crippling. But the big question is a good health department. A health department is the creation of the medical profession and all any of them accomplish is due to the scientific investigations of that great art. But to hold acute poliomyelitis in check until we find a combative treatment is the work of a courageous health officer and no other will for a moment answer the purpose.

If the situation remains as it is we will congratulate ourselves on our good luck. The health officer, the newspaper, the medical profession and last but not least is the wonderful performance of the public itself

in doing for the most part what it is advised to do—all would be futile if it did not—have contributed to this result.

Acute poliomyelitis is a disease that may strike your town next. It is ever on the increase. The lessons of this epidemic here are (1) always have it in mind especially in July and August; (2) there are no distinguishing symptoms until paralysis appears, after the first consider every other child in your community a potential candidate if it is ailing; (3) no good serum except it be a tested blood from a convalescent; (4) symptomatic treatment; (5) a courageous health officer; (6) advise the public exactly how things stand; (7) keep children in their own confines; (8) consider the streptococcic serum, but do not expect as much as you usually do from results you get in the use of diphtheria antitoxin. —H.M.H.

In Huntington

The opening of the public schools of Huntington was postponed until after the danger of the epidemic of infantile paralysis had passed, according to an announcement made by Dr. J. E. Rader, president of the Huntington board of health. The churches were also asked not to assemble any Sunday school classes of children under the age of 12 years. On September 5, 1927, there were 14 cases of infantile paralysis reported in Huntington.

From Washington

The surgeon-general of the public health service, Hugh S. Cumming, stated orally, September 2, that an outbreak of acute poliomyelitis (infantile paralysis) in Ohio has resulted in the proclamation of a local quarantine by the West Virginia authorities at Wheeling against persons under 15 years from Ohio; postponement of the opening of the West Virginia public schools from September 5 to September 19; cancellation of plans for a baby show at the Ohio state fair; imposition of restrictions, including the exclusion of children, at the West Virginia state fair at Wheeling; and calling of a conference of city and county health officials of Ohio to consider postponement of the opening of public schols in that state.

These measures have been taken, Dr. Cumming said, by the Ohio and West Virginia health authorities respectively. Experts of the public health service have been sent into both states at the request of the respective state officials to advise on measures to prevent further spread of the disease.

The authorities at Wheeling proclaimed a local quarantine, he said, after it had been found that in Ohio, from August 1 to August 30, there had been 225 cases of poliomyelitis resulting in 24 deaths, while in West Virginia, from July 26 to August 30, there had been 18 cases and one death. Dr. G. H. McCoy, director of the hygienic laboratory, public health service, was sent to Wheeling and has made a report on the situation which has been made public by the surgeon-general.—*U. S. Daily.*

Cases in the State

During the month of August there were 42 cases of poliomyelitis, familiarly known as infantile paralysis, reported to the state health department, as against 10 cases for the entire year of 1926. These figures do not indicate alarming conditions at this time, but they do indicate the necessity for taking every precaution against the spread of the disease and this the state health department and county and city health officials, working in close cooperation, are now endeavoring to do.

The largest number of cases have been reported from Ohio and Cabell counties and both of these districts are on the borderline of Ohio where the disease is widely prevalent at this time. In view of this fact Dr. W. T. Henshaw, state health commissioner, in agreement with the state health authorities of Ohio, has placed a strict quarantine against children of 15 and under coming into West Virginia from Ohio. This quarantine is still in effect and will not be lifted until it is considered, by authorities of both states, perfectly safe to do so.

Cases Are Reported

Poliomyelitis cases reported for the week ended September 10, 1927:

Arizona	2
California	49
Colorado	2
Connecticut	11
Florida	4
Illinois	35
Indiana	6
Iowa	7
Kansas	9
Maine	6
Massachusetts	92
Michigan	19
Minnesota	2
Mississippi	1
Missouri	16
Nebraska	5
New Jersey	34
New Mexico	3
New York	29
Ohio	85
Oklahoma	10
Oregon	11
Pennsylvania	41
Rhode Island	3
South Carolina	6
South Dakota	2
Tennessee	5
Texas	20
Vermont	1
Washington	7
West Virginia	17
Wisconsin	10
	550

Infantile Paralysis

The Ohio state department of health has sent out a mild warning in regard to the increasing number of cases of poliomyelitis in the state. While the situation has not reached the epidemic stage the warning is most timely. The August *Ohio Health News*, which the Ohio Society for Crippled Children has helped to distribute throughout the state, gives four pages to the general subject of infantile paralysis. Newspapers in Ohio and some adjoining states are giving the matter daily consideration. It is hoped a real epidemic can be averted. On August 28 quarantine regulations went into effect against children under 15 attending public meetings in three Ohio and two West Virginia counties.

Convention Plans

Although no announcement of the plans and dates for the sixty-first annual convention of the West Virginia State Medical Association to be held at Fairmont next spring has as yet been made, it is understood that a tentative understanding was reached at a meeting of the Marion County Medical Society held at Fairmont on September 27. Dr. C. R. Ogden, of Clarksburg, president of the association, was present at this meeting as was also the executive secretary, Mr. Joe W. Savage, of Charleston.

It is thought that next year's convention of the association will be held in May, inasmuch as the meeting of the American Medical Association at Minneapolis will take place on June 11 to 15 inclusive. The situation for the 1927 meetings was reversed, the state society meeting at White Sulphur Springs being held in June and the A. M. A. convention in May. There is a general feeling among the members of the state association that if next year's meeting was held in June, it would follow too close on the heels of the A. M. A. gathering to insure a maximum attendance.

Complete details of the Fairmont meeting could not be furnished in time for the publication date of the *Journal* and a text of the proceedings pertaining to next year's meeting will not be published until the November issue. Tentative plans for the 1928 gathering were drawn up, however, and it is understood that the committee on scientific work, headed by Dr. R. U. Drinkard, of Wheeling, had already started preparing the program.

Early Diseases in Ohio County

[EDITOR'S NOTE:—The following account of the prevalent diseases of Ohio county since its settlement was given by Dr. E. A. Hildreth of Wheeling at the second annual meeting of the West Virginia State Medical Association which was held there in May, 1869. Dr. Hildreth, who was one of the founders of the association, was born in Wheeling in 1821 and died there in 1885. Dr. Hildreth received his M. D. degree from the University of Cincinnati and began the practice of medicine in 1845. He married the daughter of John Zane, who was one of the founders of the city of Wheeling.]

Bilious or remittent fever, intermittent fever, dysentery and inflammations, formed the chief diseases of the early settlers.

Bilious fever commonly prevailed from May until November, and seldom later than the first frost of fall. Intermittent, although a regular visitant in the summer and fall, frequently extended through the winter. At this time, the forest was scarcely broken, and the river, and part of the creek bottoms, were swampy, and during parts of the year, covered by ponds of water. It is within my recollection, when two-thirds of Centre Wheeling was covered by Eoff's pond—the present site of the market-house; a considerable portion of East Wheeling, and the southern part of the old town, all were swampy. The therapeutics of this period consisted in the use of such barks, roots and plants as the botany of the country afforded; as they had no physicians, every family had its favorite prescriptions. The universal remedy for ague was poplar, dogwood or wild cherry barks, steeped in whisky; with many, boneset tea was the cure. For bilious fever, in its initial stage, an emetic of lobelia; this was intended to "break the fever and bring on sweating", which doubtless it often did, as well as purging; but if the emetic should fail to purge, liberal doses of decoction of the inner bark of white walnut induced very free catharsis. Almost entire absence from food-hot teas of sage, thyme and pennyroyal for drinks constituted the treatment. Special care was taken in obtaining the white walnut bark to strip it up if intended to vomit, and down to secure its purgative action.

The first resident physician was Dr. Forsyth in 1802, who brought with him calomel and peruvian bark, the use of which in fevers, was attended with marked success, and of course were generally adopted. As long as malarious fevers prevailed, these two articles formed the basis of treatment, until quinine, after its discovery, displaced the crude bark.

It is over twenty years since I have known a local case of intermittent—that is, one who imbibed the miasma here; for it is well known that after having suffered one attack, the predisposition to recurrence remains for many years.

It is a notable fact that seasons after great floods of the Ohio river and its tributaries, malarious fevers were not only far more prevalent, but assumed a more fatal type.

Inflammations of the head, chest or abdomen, constituted the common complications and sources of danger of fevers.

After the flood of 1812, the fevers were marked with a peculiar malignancy. Congestions of the head were rapidly succeeded by coma and death; if of the chest, by extreme dyspnoea or asphyxia; if, of the bowels, by colic, cramps and rapid prostration.

In the fall and winter of 1827, they had an epidemic fever, called by the then practicing physicians "winter fever" or "nervous fever". Whole families were attacked without regard to age or condition. It was attended with a lower grade of fever, more continued in its type, especially in its earlier stages, but as it approached convalescence, assuming the remittent type; irritable stomachs and wakefulness were common symptoms, and most difficult ones to control; convalescence was slow, and relapses frequent. Duration from four to eight weeks.

The spring, summer and fall succeeding the great flood of February, 1832, was a season of unusual prevalence of malarious

fevers, erysipelas, child-bed fever, dysentery and diarrhea. The treatment of this catalogue of diseases underwent but little variation; it was strictly anti-phlogistic, viz.: bleeding, calomel, purgatives, and "nitrous powders." The lancet was the "sheet anchor", which, to steady the patient, was thrown out in "heroic style and oftentimes repeated "ad delequim anami." Dr. Rush's "ten and ten" was the next item in the course of treatment; this was repeated "pro re nata" which meant if the patient became worse, it was to be given oftener and vice versa. At all events, copious and frequent stools were to be secured every day, and the medicine continued until a certain quality of stool was produced, termed bilious, though often rapid and profuse ptyalism supervened before this event. Cold water, that boon to the human family and panacea of thirst, was persistently refused to the famishing patient, partly through the popular fear of inducing salivation. The "nitrous powders" were prescribed to relieve pain, procure sleep and induce diaphoresis. A strictly farenaceous and spare diet, with warm drinks, comprised the general treatment. From the best data within reach, the ratio of mortality of this period was: bilious fever 15 per cent; puerpurial fever, 50 per cent; erysipelas and dysentery, 20 per cent.

The form and character of disease does not appear to have undergone material modification during the period between 1832 and 1849; however, the treatment was materially changed by the liberal use of tart. Antimony, which was frequently substituted for the lascet.

Quinine in the remissions of fever and a less dose of mercurials, less purgatives and a larger use of opiates, formed the common practice when I opened my office here in the spring of 1845, and continued to be the practice until 1849, when fevers noticeably began to change to a continued type; and not only fevers, but almost every other form of constitutional disease, became so modified in its type as to require marked alterations in treatment. Since 1854 the use of the lancet has ceased; mercurials and antominals have become of limited use of questionable advantage. Typhoid fever and the impress of its type, has made the use of tonics and stimulants indispensible to the successful treatment of a majority of patients for whom we prescribe.

The first visitation of cholera here was in 1833; the second in 1849-50; the third and last in 1854. I believe it is a received opinion that epidemics or the epidemic constitution of the atmosphere produces marked and peculiar changes in the form and character of other diseases, not only during the prevalence of some epidemics, but after they have ceased. The substitution of typhoid fever for the old bilious remittent, after the cholera, is a fact I can account for in no other way. At this writing, typhoid fever is the prevalent type.

It would be very interesting to examine its course and treatment, especially as it prevailed here during the past year; but our remaining time and space will not permit the inquiry.

Scarlatina was known to the older physicians as "French measles." The first cases appeared about 1825. Then, mild in its course and seldom fatal; frequently mistaken for Rubeola; treated like it, with domestic remedies. This simple or mild form appears to have existed until 1838 or 1840. We have been scarcely free from it since; but the epidemics of 1849, 1850 and 1854 are worthy of note. As before remarked, cholera was present with each; but the disease in 1849 assumed the anginose form; whilst in March, 1850, it was of such mild type as to require little or no medication. Then again, in 1854, it became peculiarly malignant and fatal—the initiatory chill, followed by vomiting and purging and collapse, and the appearance of the eruption, high grade of fever, delirium, coma, swelling and lividity of the fauces, with ulceration, sloughing, prostration and death. Often those who survived were afflicted with dropsy, abscessed about the neck or deafness. It visited us again in 1864 in a more manageable form. In the treatment of scarlet fever, local applications to the fauces are

justly falling into disuse; whilst the attention of the physician is directed more to the general condition of the patient in moderating the violence of the fever, and using such nourishing diet and cordial stimulants as may sustain the vital forces until the shock of the disease be overpast. The use of the chlorates of potassa and soda and chloride of iron as internal remedies, has doubtless been attended with good results; but I have never seen it cured.

Diphtheria.—The winter of 1834-5 was of unusual severity. During this period, there appeared an anginose affection known as "putrid sore throat." The attack was sudden, beginning with swelling of the cervical and sub-maxillary glands, redness and swelling of the fauces, and membraneous exudation; deglutition difficult or impossible, fever and delirium. In some cases, ulceration of the tonsils and adjacent soft parts, followed by sloughing; sometimes, early in the attack, croupal cough and suffocation. No eruption.

It attacked adults and children alike, and in many instances, proved fatal in twenty-four or forty-eight hours. It was apparently not controlled by the remedies used, which were calomel, emetics, astringent and stimulating gargles, and caustic applications to the throat.

What relation to diphtheria this disease has, I do not pretend to know. Unquestionably diphtheria appeared in June, 1859, and still prevails.

We have several forms and complications of this disease, which may be conveniently divided into three classes:

1st. Marked by some swelling of the tonsils, with slight redness, and several points of a grayish color, usually preceded and accompanied by pain in the back of the head.

2nd. Decided redness and swelling of the tonsils, and soft palate, which are covered more or less with diphtheretic effusion, attended with difficult and painful deglutition, fever, headache, and more or less swelling of the cervical glands.

3rd. Swelling and effusion in the fauces and nares the parts not covered by the effusion of livid color, the submaxillary and adjacent glands much swollen, red, very hard and painful, deglutition extremely difficult, a thin yellow acrid discharge from the nostrils, fever with delirium, and great prostration.

Occasionally in the second and third varieties and usually on the fourth or fifth days, dyspnoea, with croupal cough, supervenes, with, (sometimes) the expulsion of false membrane-casts of the bronchial tubes, from two to nine inches in length; this membrane, under the microscope, is composed of a fibrinous basement, interspersed with exudation corpuscles and is firm and elastic.

Hoarseness, occurring during any stage of diphtheria, may be regarded as a dangerous symptom. Persons of scrofulous constitutions suffer most with this disease, and probably are more liable to its invasion. It is conceded to belong to the class of blood-poisons, and commonly regarded to be infectious. We have seen it and scarlet fever together in the same patient, each bearing their distinctive marks. The sequela are paralysis , alubumenuria, neuralgia, croup, bronchitis, etc.

The treatment consists in the free use of chlorate potash, tincture muriate iron, muriate of ammonia, warmth, and nourishing diet in the milder forms, and in the malignant, in addition, quinine, milk punch, carb ammonia, beef tea, lime water inhalations, and recently carbolic acid, internally and locally. Although I think the local use of caustics and irritating substances to the throat have generally been discarded, and the disease combated by constitutional remedies.

Dysentery is an annual visitant during August, September, October, more common in the rural districts than in the city. During the last twenty years, it certainly has declined in frequency and fatality. In its modern form it is generally controlled by full doses of opium, followed by mild mercurials and saline cathartics.

Cholera infantum, restricting its visits almost to the limits of the city, and confin-

ing its victims to those in the period of first dentition, has been the dread of anxious parents for many years. It begins its incursions about the middle of May, lasting until the first frosts of fall. Although it comes as regularly as the season, yet its duration and severity has been quite different, owing, apparently, to the climatic changes of each summer. The peculiar development which the gland of the intestinal mucous membrane undergo, during the period of dentition, appears to be the predisposing cause, and high temperature, vitiated air, and irritating ingesta, the exciting causes of this disease. Timely removal to a pure and elevated air, with proper food, will prevent its occurrence or stop its progress. It is however but just to state the mortality to infantile life is greater from this than any other disease.

I have thus glanced over the principal features of diseases in Ohio county, and endeavored to record facts to the best of my ability, and make an honest statement of them. Upon a general review of Ohio county, I think its ratio of mortality will compare favorably with any equal portion of territory between the Atlantic and Pacific oceans.

All of which is respectfully submitted,

E. A. HILDRETH,

Wheeling, May, 1869.

New Compensation Fees

A flat rate for fractures may solve the question of a schedule of fees for Workman's Compensation cases now being worked out by Commissioner C. L. Haeberlin and the compensation committee of the West Virginia State Medical Association. The decision of the commissioner in regard to the new schedule will probably be announced early in October.

Commissiones Haeberlin opened negotiations on Tuesday morning, September 6, when he called a conference at his office with nine of the leading physicians and surgeons in the state. Those who attended were Dr. C. A. Ray of Charleston, president-elect of the West Virginia State Medical Association; Dr. J. Ross Hunter of Charleston; Dr. R. H. Walker of Charleston, chief medical examiner of the compensation commission, Dr. A. P. Butt of Elkins, Dr. J. H. McCulloch of Beckley, Dr. R. A. Haynes of Clarksburg, Dr. J. A. Guthrie of Huntington, Dr. C. H. Clovis of Wheeling, Dr. William R. Goff of Parkersburg, Dr. W. A. McMillan of Charleston, Dr. G. G. Irwin of Charleston and Dr. F. P. Weltner of Charleston.

In opening the conference, Commissioner Haeberlin stated that it was called for the purpose of securing as much cooperation as possible between the doctors of West Virginia and the Workmen's Compensation Commission. The question of medical fees was then discussed informally by the doctors present and the conference recessed shortly before noon.

At 1:30 o'clock the same afternoon the doctors reconvened with Commissioner Haeberlin and Dr. Clovis and Dr. Haynes each made statements on certain aspects of the work of the doctor. It was the opinion of Commissioner Haeberlin that unnecessary charges had been made against the commission in occasional cases of minor injuries. It was pointed out that the charges for daily dressings in some cases had been out of all proportion to the severity of the injuries. The committee of doctors went over a number of reports in the commissioner's office which indicated that this had frequently happened.

The committee of doctors advised Commissioner Haeberlin during the afternoon session that the West Virginia State Medical Association would do everything possible to prevent the occasional unreasonable charges, at the same time explaining that the doctors must have a good deal of freedom of action. There was little doubt in the minds of the doctors present that most of the misunderstandings had been caused by minor injury cases in which treatment was drawn out. There had apparently been no controversy in cases of major injuries.

An agreement was reached between the medical committee and Commissioner Haeberlin that in case of small injuries requiring unusual attention, this fact must be set out in a letter to the commissioner and his authority secured for additional treatment.

The entire schedule of fees was discussed at length during the conference but for lack of time, the work could not be completed on the day of the meeting. The committee delegated the completion of this work to the Workman's Compensation Committee of the West Virginia State Medical Association, which committee was instructed to proceed as rapidly as possible in order to get a fee schedule definitely established. The general trend of opinion was that the new fee schedule might resolve itself into a flat rate for various fractures.

The West Virginia doctors who attended the conference on September 6 were highly pleased with the attitude of Commissioner Haeberlin toward the state medical profession and they believed that much good would come from their meeting with him. They were particularly gratified by the desire on the part of Commissioner Haeberlin to cooperate with the doctors.

Dr. Berman Moves

Dr. D. Berman of Moundsville, health officer of Marshall county, has moved to Victoria, B. C., where he will be engaged in similar work. Dr. Berman was a member and an active worker in the West Virginia State Medical Association and has a host of friends in the Moundsville and Wheeling district. The vacancy in the Marshall county health unit has been filled by Dr. Frank C. Makepeace of Spencer.

Dr. Ogden Returns

Dr. and Mrs. C. R. Ogden of Clarksburg and their two daughters, Miss Mary and Miss Virginia Ogden, returned recently from an extended tour of Continental Europe. Dr. Ogden and his family spent two weeks cruising on the yacht Prince Olav among the fjords of Norway, visiting the North Cape and the Land of the Midnight Sun. Dr. Ogden also visited the northermost hospitals in the world, located at Hammerfest, Norway.

After their cruise on the Western and Northern coast of Norway, Dr. Ogden and his family went by rail to Eastern Norway, Sweden, Denmark, Germany, Holland and Belgium, from where they crossed the channel to England and sailed from Liverpool.

Personal News Items

—Dr. Chester R. Ogden of Clarksburg, president of the West Virginia State Medical Association, has recently returned from a summer tour of the Continent.

—Dr. W. P. Bonar of Moundsville took the summer course in surgery at the state university at Morgantown in July.

—Dr. R. A. Ashworth and family of Moundsville recently returned from a week's fishing trip to the South Fork of the South Branch of the Potomac river.

—Dr. James R. Bloss of Huntington will attend the meeting at Asheville, N. C., of the Association of Obstetricians, Gynecologists and Abdominal Surgeons on October 15, 16 and 17. He will deliver a paper on "Modern Obstetrics in the Home."

—Dr. Benjamin F. Bone of Marshall county spent the month of July at his summer home at Lake Odessa, Michigan.

—Dr. W. G. C. Hill of Cameron is taking a course in eye, ear, nose and throat at the New York Polyclinic.

—Dr. C. G. Morgan of Moundsville will shortly take his annual hunting trip to Canada and will be accompanied by Dr. Clifford John of Morgantown. Dr. Morgan has announced that his "Slick Tailed Possum Club" will go this year into the Lake of the Woods section and that there is one vacancy in the membership open to some congenial

physician or surgeon. The party expects to bag bear, moose, deer and ducks and will leave about the first of October.

—Dr. Page Damron Barlow of McMechen presided at the annual meeting of the Baltimore and Ohio surgeons which was held in Baltimore on September 28-30 inclusive. Dr. Barlow is president of the association. A large number of surgeons from the northern end of the state attended this gathering.

—Dr. Joseph E. Arnold, formerly of Pleasant Valley, has moved to Cameron, W. Va., and opened his practice there.

—Dr. C. R. McGuffie has moved from Cameron, W. Va., to McMechen where he will practice in the future.

—Dr. A. F. Compton of Moundsville recently left West Virginia, moving to Warren, Ohio.

—Dr. W. S. Shepherd of Charleston has recently returned from Europe where he spent several weeks studying in Vienna.

—Dr. H. D. Law of Nitro left recently for Europe where he will study eye, ear, nose and throat. Dr. Law expects to specialize in this work upon his return to America.

Science and Sex

In the midst of the fever-hot enthusiasm over the rejuvenation by surgical performances related to the sex glands, the report of Lieutenant J. P. Arland of the Royal Air Force Combined Hospital in Busrah, India, is as refreshing as a cold breeze out of Medicine Hat, declares an editorial in *Hygeia.*

This report, beginning with the statement that in only one out of fifteen cases was there anything even remotely resembling benefit to the patient, especially so far as increased sexual vigor was concerned, concludes that the Steinach method is of doubtful value and the Voronoff method leads to inflammatory changes without producing any change to the good.

Hospital Upheld

The supreme court of New York state recently upheld the right of the Binghamton City Hospital to expel a student nurse. The nurse was ousted for neglect and disregard of duty and sought a writ compelling the hospital to reinstate her and permit her to be graduated.

In the justice's opinion was a summary of the reasons given by the student nurse who "alleged that she had fully complied with the entrance qualifications, had been given to understand that she would graduate, and was ordered to purchase her graduation dress. She had completed her four months' probationary period and had passed her examinations at all times with high standings."

The petitioner asserted that her expulsion was wrongful because she was not permitted to be represented by counsel and was not permitted to hear the evidence against her and had less than an hour's notice of a hearing. The justice ruled, however, that in the case there appears to be no statutory requirements giving her the right to a hearing. The justice specifically mentioned that the prospectus sent to prospectiae students, "it was definitely stated that the hospital had the right to terminate the connection of any pupils for reason which the hospital authorities might deem sufficient."—*Hospital Management.*

Bacteriologist Wanted

Applications for bacteriologist must be on file with the Civil Service Commission at Washington, D. C., not later than October 4.

The examination is to fill vacancies in the Bureau of Food, Drug and Insecticide Administration, Department of Agriculture, Washington, D. C., and in positions requiring similar qualifications.

The entrance salary is $3,800 a year. A probationary period of six months is required; advancement after that depends upon individual efficiency, increased useful-

ness, and the occurrence of vacancies in higher positions.

The duties will be to determine the bactericidal and antiseptic properties of commercial disinfectants and antiseptics and of products used in their manufacture; the development of methods for conducting these examinations; research work in connection with problems relating to the properties and application of commercial disinfectants and antiseptics.

Competitors will not be required to report for examination but will be rated on their education and experience, and writing to be filed with the application.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the postoffice or customhouse in any city.

Press and Prevention

Once upon a time you called a doctor when you were sick. Then came the idea of preventive medicine, which in recent times has grown by leaps and bounds. It has done more than could have been accomplished by a "Use More Doctors" week. We no longer wait to be sick. We go to the doctor to keep from getting sick. He vaccinates us against smallpox, sticks us for typhoid and again for diphtheria. If we have chronic colds, he may treat the colds but he prefers to take out our tonsils and adenoids, preventive measures against all sorts of ills, from lassitude to laryngitis. No telling what a mole may come to. Have it off. You may be in a bad way and not know it. Have a thorough physical examination and extend your life.

Is a child bow-legged or knock-kneed, are its teeth crooked, has it a cast in the eye? These things were once regarded as acts of Providence and therefore to be left alone. Today we are led to believe that they can be corrected and that if neglected they may cause all sorts of troubles in years to come, from headaches to loss of opportunity to wed. No parent who has the true interest of a child at heart can turn a deaf ear to the dentist, the orthopedist and the optician, and another specialist must be called in to determine what the child shall eat.

In the old days an ounce of prevention was said to be worth a pound of cure. Today we have a pound of prevention for every ounce of cure. Preventive medicine was once a luxury to be indulged in only by the wealthy. Today it is as much a part of the average up-to-date home as an electric range, an electric refrigerator, a telephone and an automobile.

Preventive medicine, if it has not been the cause, has accompanied the transition of the family from a system of extensive culture to one of intensive culture. The family acreage has been cut down to permit of more tilling and fertilizing.

No one would dare to question the virtue of preventive medicine any more than he would question the other improvements of modern civilization. But like most modern improvements, it makes a dent in the pocketbook.—*Baltimore Sun.*

Tri-State Meeting

One of the best meetings ever held of the Tri-State Medical Society took place on Thursday, September 29, at the Hotel Pritchard in Huntington. Several hundred doctors from West Virginia, Ohio and Kentucky were on hand for the meeting, which was presided over by Dr. Charles E. Holzer, of Gallipolis, O., president of the society. A banquet was served at the Hotel Pritchard between the afternoon and evening sessions.

The speakers were Dr. Roger H. Bennett, of New York City, Who read a paper on "Current Pediatric Topics," Dr. Arthur R. Elliott, of Chicago, who talked on "Coronary Arterial Disease and Coronary Thrombosis," and Dr. Walter T. Dannreuther, of New York City, who gave a paper on "The Office Treatment of Gynecological Patients."

Inoperable Carcinoma

An analysis of 363 cases of recurrent inoperable carcinoma of the breast treated by radium and roentgen ray is presented by Burton J. Lee and Norman E. Tannerbaum, (*Journal A. M. A.*, Jan. 23, 1926). One hundred and fifty-eight of these were so far advanced at the time of the first visit that they were obviously hopeless from the outset. These very advanced cases were treated only with the idea of offering palliation. With the exclusion of this group, there remain 205 cases in which treatment by irradiation as a therapeutic agent could offer a reasonable hope for some regression and control of the disease. A history of trauma, as a possible etiologic factor, could be elicited in only seventy-six cases. The number of patients on whom radical surgery was done was 239. Seventy-five cases of primary inoperable carcinoma of the breast treated by surgery alone, reported in 1924, showed only eleven that had escaped recurrence after five years or more. Fifty-four of the patients had died from recurrence, and ten, who could not be completely traced, also had definite recurrent phases of the disease. One hundred and seventy-three cases showed involvement in the supra-clavicular fossa. The axillary nodes on the same side as the breast lesion were palpable in 129 instances, though radical mastectomy had been performed in 238 cases, a recurrent percentage of 54. The inference seems inevitable that the surgery was less thorough than it might have been, and this inference is further strengthened when it is recalled that the chest wall was the next largest recurrent group, 124 cases, or 52 per cent. In this series of patients irradiation with the roentgen ray has been the agent most frequently employed. It is not a discrimination for this type of therapy in preference to radium or a combination of the physical agents but because the lesions present were best handled by roentgen-ray therapy. The next greatest number was treated by a combination of radium and the roentgen ray, both forms being used over identical areas of skin quite frequently. Radium alone as an agent for treating inoperable recurrences has had the least use, but some of the most striking results have been obtained in this way. Fewer cases have lent themselves to exclusive radium therapy because most of the cases presented too widely disseminated lesions. In the majority of cases of roentgen-ray treatment, irradiation by low voltage has been employed. The dosage in each instance was planned to meet the need of the individual case. This form of roentgen-ray therapy was employed for the supraclavicular or axillary involvement, for diffuse cutaneous recurrences of so-called inflammatory carcinoma and intrathoracic or osseous metastases. Striking disappearances of cutaneous nodules have occurred following the use of the roentgen ray. Some of these cases have shown a reappearance of the disease in the irradiated field, and these lesions are particularly resistant to treatment, the cells becoming "ray fast," as Hintze terms it. The radium pack or radium tray is used for large, well circumscribed recurrences, while bare tubes of emanation are employed in the smaller, superficial recurrent nodules or in axillary nodes; but the latter form of recurrence has been difficult to treat satisfactorily. A few well chosen cases with small isolated recurrences not fixed to the chest wall have been successively handled by electrocoagulation. The average duration of life after recurrence was two years and one month, the shortest one being one month and the longest ten years and four months. The average duration of life for the entire group from first symptoms to death, or, if living, to May 1, 1922, was four years and five months. One patient lived only five months from the date of the first symptom, while the longest duration of disease of any patient was thirty-eight years and five months. Thirty-four patients are alive, which is 9 per cent of the total number, or 17 per cent of the favorable group. The total number alive without evidence of any lesion is eighteen, while sixteen have disease still present. The average duration of life of this group since recurrence is slightly over five years.

WOMAN'S AUXILIARY

Monongalia County

So far as we can judge the Monongalia Auxiliary is the only one which has been active during the summer months. This auxiliary has undertaken to equip and endow the new nursery at the Monongalia County Hospital. With such a small auxiliary it was necessary to plan ways and means to make a part of this money and a benefit bridge tea was considered at the May meeting. A brief account of this benefit, taken from a longer account in the Morgantown paper, follows:

"The substantial sum of seventy-five dollars was cleared yesterday afternoon at the bridge tea given at the Country Club by the members of the Woman's Auxiliary of the Monongalia County Medical Association for the benefit of the new nursery at the County Hospital.

"Twenty-five tables of bridge started play at 2 o'clock and later in the afternoon many more guests arrived for the ice course served. More than one hundred and fifty women attended during the afternoon.

"The committee whose work and ability are responsible for the success of the afternoon were Mrs. J. Preston Lilly, chairman; Mrs. L. W. Coburn and Mrs. M. H. Brown."

—M.A.P.

Auxiliary Secretary

Mrs. J. R. Shultz of Charleston has been appointed corresponding secretary for the State Auxiliary.

Convention Gavel

The State Auxiliary is the happy recipient of a gift from Mr. W. L. Savage, president of the Charleston Lumber Company. This gift is a gavel turned from wood taken from the old Capitol building. In the hands of our president, Mrs. B. S. Preston, it will open the annual meeting in Fairmont next summer.

Our New Auxiliary

Greetings to the newly organized Auxiliary of the Central West Virginia Medical Society! A temporary organization was effected at Webster Springs on August 6 which will probably be made permanent when the Central West Virginia Society meets at Buckhannon on October 12. Mrs. J. B. Doddrill of Webster Springs was elected president at the August meeting and Mrs. J. A. Rusmissell of Buckhannon was selected as secretary.

We wish the members a most successful year and look forward with keen interest to a report of their second meeting this month

Daughter Arrives

Dr. and Mrs. H. R. Glass of Charleston announce the birth of a new daughter, who arrived in September.

Mrs. Preston Returns

Mrs. B. S. Preston and family have recently returned to Charleston from a motor trip to Virginia.

Mrs. M. I. Mendeloff has returned from a motor trip to Washington, D. C., and Norfolk, Virginia.

Dr. and Mrs. W. A. Thornhill have returned from a week's motor trip to Washington, D. C.

Kanawha Auxiliary

Plans are now being made for the renewal of activities of the Kanawha Auxiliary, their first fall meeting to be the first week in October at the Capitol Inn in the form of a luncheon.

Mrs. R. K. Buford has returned from Madison, W. Va., where she spent the past week with friends.

The West Virginia Medical Journal

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C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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THE TREATMENT OF PEPTIC ULCERS *

By J. SHELTON HORSLEY, M. D.
Richmond, Va.

THE intelligent treatment of peptic ulcer must be based upon a comprehension of the etiology and pathology of the lesion and upon a knowledge of the physiologic function of the structures in which it occurs.

The direct cause of all peptic ulcers has not been definitely determined. There are unquestionably many predisposing factors. The fact that peptic ulcer usually occurs in the mucosa of the gastro-intestinal tract that has an alkaline secretion, and at the same time near that portion of the mucosa of the stomach with an acid secretion, is significant. The experiments of Mann and Williamson, in which they sideswitch the alkaline secretion of the duodenum including pancreatic juice which is its chief alkaline constituent, and unite the lower jejunum to the stomach thus securing a high incidence of peptic ulcers, is suggestive of this influence of the acid gastric juice upon intestinal mucosa. And yet the transplantation of a segment of intestine into a defect in the acid-bearing portion of the stomach has been done not infrequently without the development of peptic ulcer. C. B. Morton, of the Mayo Clinic (Morton, Charles Bruce, Observations on Peptic Ulcer, Ann. Surg., vol. LXXXV, p. 879, 1927) has shown experimentally that, when this duodenal drainage operation of mann and Williamson is done, not only do wounds in the gastric mucosa heal more slowly and a larger percentage of them result in chronic ulcer than without this drainage, but this difference in ulcer formation also occurs in patches of jejunum transplanted to the stomach. He has also shown that chronic peptic ulcer occurs after this duodenal drainage operation more frequently along the lesser curvature of the stomach than in other regions of the gastric mucosa. He finds that when jejunal mucosa is transplanted to the stomach ulcers form more

* Read before the West Virginia State Medical Association, at White Sulphur Springs, June 21, 1927.

readily when it is placed along the lesser curvature than when placed elsewhere.

It may be possible that when the segment of intestine is transplanted to a defect in the stomach the interference with its normal peristalsis would prevent the occurrence of ulcer. In other words, when peristalsis occurs the blood supply is temporarily shut off to the contracted portion of the bowel. In such an instance the mucosa would be peculiarly liable to the effect of the gastric juice. In the transplantation, however, when the nerve supply has been affected and there is but little tendency for marked contraction, the blood supply to the transplanted segment is constant, so resistance to the irritating effect of the acid may be better than would occur if normal strong peristalsis were present. Along the lesser curvature trauma from food and from peristalsis is greater than elsewhere in the stomach, which may explain the more frequent occurrence of ulcer in this region even in transplanted mucosa. It must be recalled that normally at the end of gastric digestion the duodenal contents regurgitate into the stomach, which may protect the pyloric mucosa to some extent from the acid of the gastric juice. After the duodenal drainage operation this regurgitation cannot occur.

The work of Rosenow in showing the etiologic effect of certain types of streptococci in creating peptic ulcers has received much attention, and this appears to be the causative factor in some peptic ulcers. In considering the causation of peptic ulcers the indirect effect, of foci of infection, injury, and to some extent familial tendencies, must be borne in mind. It seems probable that in those cases due to a hematogenous infection the peptic ulcer is the survival of many lesions which doubtless resulted from a shower of bacteria or toxic products from some focal infection. Probably at first there was cholecystitis, pancreatitis, nephritis and erosions of the gastric and duodenal mucosa. In some cases one of these lesions will survive while the others disappear.

The recent work in physiology of the stomach has thrown much light upon pathology of gastric and duodenal diseases, and upon therapeutic applications for the treatment of these lesions. We know that the pyloric portion of the stomach secrets an alkaline material and no pepsin, and that histologically the glands in this region are different from those in the cardiac portion of the stomach where acid and pepsin are formed. The work of Cannon, Carlson, Lukhardt, Ivy and others has added greatly to our knowledge of the physiology of the stomach and duodenum. Ivy, by experimentally separating a pouch of stomach in a dog from all its normal attainments has shown that there is undoubtedly a humoral stimulus for the gastric secretion as well as a stimulus from the brain and from the contact of food with gastric mucosa. There seems also to be a stimulus formed from food in the intestine.

Alvarez, Kline and others have shown that gastric peristalsis instead of arising about the center of the body of the stomach where it appears in fluoroscopic examination really begins along the lesser curvature near the esophagus and goes along in ripples not fluoroscopically visible to the body of the stomach, where the peristaltic wave is strong enough to show on roentgen-ray examination. The left half of the stomach remains tonically contracted while peristalsis proceeds in the right half. An ulcer on the lesser curvature consequently interferes with peristalsis, whereas an ulcer in the greater curvature causes practically no symptoms unless there is perforation or hemorrhage.

In the matter of treatment, all peptic ulcers, should not be treated alike. Some peptic ulcers are small and superficial. Proper physiologic rest, which means giving a diet that is sufficient for nutrition, but at the same time puts as little work on the stomach as possible, is helpful. As the function of the stomach is largely concerned with the digestion of proteins and fats, and as carbohydrates are not affected by the stomach except by the inversion of some sugars, a diet of as little meat proteins as possible should be used. Walter C. Alvarez, an internist who has done outstanding work in

physiology of the gastro-intestinal tract, (Alvarez, Walter C. A Practical Treatment of Duodenal Ulcer. Journ. Am. Medical Asso., 87: 2086-2089, Dec. 18, 1926), has gone into the medical treatment in much detail. He says: "Before starting a patient on medical treatment, one naturally asks himself whether that particular case is suitable for it; and in making that decision he will take into consideration a number of indications about which both surgeon and internist are in fair agreement. First, a word about gastric ulcer, because there the problem is complicated by the ever-present danger of malignant degeneration. Even when the crater is small the patient cannot be assured that he hasn't a cancer; and especially when the gastric acids are low, if the physician lets him drift on with medical treatment he assumes a tremendous responsibility. Fortunately there is no need for such worries with duodenal ulcer, as cancer in the first few inches of the bowel is exceedingly rare."

"Patients with duodenal ulcer causing marked obstruction at the pylorus should generally be operated on as soon as they have been prepared by having the stomach washed and the body fluids restored. When there is considerable scarring and mechanical closure of the pylorus, it is foolish even to attempt medical treatment, and not infrequently all that the physician accomplishes by it is the loss of his patient's respect. Furthermore, it is in such cases that surgical treatment produces its most gratifying results. The surgeon had better be called in if the patient has had a number of fairly thorough and more or less successful medical treatments, and especially if the ulcer is becoming chronic and unresponsive to dietetic management. He should be called, too, if there is a strong suspicion that there are complications such as cholecystitis, appendicitis, or perforation into neighboring tissues, or if the ulcer has shown a tendency to bleed severely." . . . . .

"Medical treatment, therefore, should be reserved for the early case; for the young men and women with their first attacks, and for those who have the leisure and money to spend on what may turn out to be but temporary relief. Medical treatment may also be offered to those who do not feel sick enough for operation, to those who on account of business and family reasons must put it off a while, and to those who cannot afford the time. It will have to be used when the patient is too poor a surgical risk, and it will be the last resort when an operation has failed to bring relief, and when there is no evidence that a gastrojejunal ulcer, a poorly made gastroenterostomy, marked gastric stasis, a new ulcer, or some other serious complication is calling urgently for further operative intervention."

"The essential element of the treatment is the food between meals. In the morning a mixture should be made up which may consist of a quart of milk, two eggs and either a gill or half pint of cream, depending on the patient's need for extra calories. If milk is not well tolerated, a certain amount of thin gruel made from any cereal may be substituted. Robinson's Scotch groats or Robinson's barley flour is very suitable. The patient takes a bottle of this mixture to work with him and drinks a glassful, about 6 ounces, at 10 A. M. and at 2, 4, 8 and 10 P. M. He should have another glassful by his bed in case he should wake during the night. There does not seem to be any theoretical or practical reason for icing it. He takes his breakkfast at 7:30 A. M., lunch at 12:00 M., and dinner at 6:00 P. M. If he should be traveling or if he should forget to take his bottle with him, he can get a milk-shake or malted milk at a soda fountain. He may also carry around with him a box of crackers of some kind."

According to Alvarez it is not necessary to remove dead teeth, or tonsils unless there is marked evidence of disease of the tonsils. He thinks, however, that if there is pyhorrhoea or if there are carious snags in the teeth these conditions should be cleared up at once.

Alvarez says that the average physician has no conception of the helpfulness of frequent feedings in a diagnostic way, and that if two-hourly feedings give prompt and complete relief it is almost certain that the

patient has a duodenal ulcer, because no other lesion will respond so promptly to this treatment. If complete relief is not secured, there may be a mistake in the diagnosis or the ulcer may be complicated by perforation and scarring, or by cholecystitis or chronic apendicitis.

He believes that "the essential feature of the treatment outlined is the taking of food between meals. That, unaided, will bring comfort to many patients with uncomplicated duodenal ulcer."

Doubtless much injury has been done by alkalis, particularly bicarbonate of soda. A little soda may do no harm, but the continual giving of large doses of soda several times a day over long periods must necessarily interfere with the functioning of the gastric mucosa and eventually injure it. If the same thing can be done by regulation of the diet as by the giving of soda, it seems a far preferable therapy. Alvarez states that he rarely gives alkaline powders of any kind. He says: "Occasionally I have found cases in which, in addition to the diet, the usual mixture of magnesia, sodium bicarbonate and bismuth was helpful, but in the last thirteen years I have not prescribed it more than five or six times. Much can be said for the theory of alkalization, but the fact remains that in all those years my results with frequent feedings were so satisfactory that rarely did the patients feel the need of going back to their soda." He has found after trying this treatment for such a time that in almost all cases except those suspicious of cancer preliminary medical treatment along this line is most beneficial. If the patient can lie in bed for a week or two it aids in the treatment because not only is the whole body put at rest, but less food is required to maintain nutrition and consequently less food is necessary.

It seems unfortunate that there should be a controversy as to whether an ulcer should be treated medically or surgically. The therapeutic measure that is best for the particular ulcer should be adopted. When an ulcer is small and superficial and gives a history of existence of only a few months, medical treatment should be adopted, and will often be successful. When an ulcer is larger and has existed for some time, operation should be done. When the ulcer is in the stomach and is large, a surgical operation should always be earnestly considered. In the duodenum, medical treatment can be persisted in for a longer time than in the stomach because there is not the same danger of cancerous degeneration. In a jejunal ulcer, which almost never occurs without a preceding gastroenterostomy, there is a danger of perforation and of hemorrhage as well as of the peculiar tendency of this type of ulcer to burrow into the surrounding tissues. It is doubtful if this type of ulcer, well established, is ever cured by anything but surgery.

Gastric peptic ulcers which do not show a tendency to heal and which are two centimeters or more in diameter, may be considered as suspicious of carcinoma. The physician who treats such a case indefinitely by medical means assumes, as Alvarez says, a very grave responsibility. That some of these cases heal after years of treatment by medical means is undoubtedly true, but it seems equally probable that some of them form a basis for cancer and the patient's life may be lost by the delay. That gastric peptic ulcer is a forerunner of a cause of cancer is not denied by any one who has made a study of this condition. There is much dispute as to the incidence of this occurrence. The statement has been made from the Mayo Clinic that probably 71 per cent of cancers of the stomach seem to show evidence of a preceding peptic ulcer, and that in 68 per cent of gastric ulcers there is histologic evidence of a probability of cancerous change. From this extreme we have at the other Ewing, who thinks that not more than 2.5 per cent of gastric cancers originate from preceding peptic ulcers. Conservative men like Finney believe that 10 to 15 per cent of gastric cancers have their origin in peptic ulcers. Smithies puts it upward of 40 per cent. At any rate, we can see that at least a good portion of gastric cancers arise from gastric ulcers. Certain tissues of the body are more predisposed to cancer than others, and the stom-

ach seems to be one of these tissues. Irritation here may develop cancer that in other tissues would have no effect. We must take the condition as we find it. Irritation about the tongue or lip, as from smoking or chewing unusual things, frequently cause cancer. At the same time irritation upon the palms of the hands, that seems to be stabilized tissue, practically never causes cancer. The tissues in the duodenum where ulcer often occurs develop cancer very rarely, whereas cancer of the stomach is very common. About one-third of all the deaths from cancer are from cancer of the stomach. In the registration area of the United States, in 1924, cancer was the fourth most frequent cause of death, and there were 34,250 deaths from cancer of the stomach and liver, constituting 37.58 per cent of the total number of deaths from cancer in this area. (Soper). Primary cancer of the liver is rare, so we may assume that one-third of the deaths from cancer are from gastric cancer.

I have had cases of cancer of the stomach that gave a very clear history of gastric disturbance for periods of twenty, thirty or forty years, and some of these patients had been treated by very promient medical men. It seems likely that in such instances there was an initial benign lesion which had finally become cancerous.

In the aged, as in men over seventy, any ulcerative lesion of the stomach is peculiarly likely to develop cancer. In the last two years I have done partial gastrectomy for cancer of the stomach upon five patients more than seventy years of age. Their ages were 71, 73, 77, 70 and 75 years respectively. All of these patients have recovered from the immediate operation, though one is still in the hospital. The operation in all these cases was done under local anesthesia. In one of them, Mr. J. J. H., 77 years of age, there was a very superficial ulcer that was soft and appeared to be benign and was accompanied by a small polyp in the pylorus, but the ulcer was so superficial that it had not penetrated the muscular coat. Roentgenologic diagnosis by Dr. Wright Clarkson of Petersburg, of pyloric obstruction and probable cancer, made me feel that gastrectomy should be done, and though the type of cancer was very malignant the gross findings appeared to be only a superficial erosion with slight ulceration. Such cases, even if very malignant, stand some chance of cure if excised very early.

In ulcer of the duodenum, if the ulcer is small and not infiltrating, and yet has resisted competent medical treatment, some type of pyloroplasty seems indicated. In this type of ulcer gastroenterostomy tends to revolutionize the physiology of the stomach, leaving the pylorus still open and at the same time reducing the alkalinity of the duodenal contents and subjecting the jejunal mucosa to the strong acid gastric juice without the protection of the high alkalinity of the duodenal contents which would otherwise occur if it had not been reduced by some of the gastric juice going through the open pylorus. When the ulcer of the duodenum is extensive or when a stricture has occurred, gastroenterostomy is an excellent operation, but this had best be accompanied by occlusion of the pyloric end of the stomach by a stout kangaroo tendon. If this is tied just tightly enough to produce occlusion without necrosis, the occlusion lasts longer and will be more effective.

In jejunal peptic ulcer disconnection of the gastroenterostomy with partial gastrectomy seems indicated. In an ulcer of the stomach which does not quickly respond to medical treatment or if moderately large, partial gastrectomy is the operation of choice. I have been doing a modification of the Billroth I operation which is very satisfactory. A small gastric peptic ulcer in which the lesion is not extensive may sometimes be excised locally, but as a rule partial gastrectomy is more satisfactory. This local excision should always be accompanied by a pyloroplasty in order to lessen the labor of the temporarily crippled stomach in emptying its contents. A measure of physiologic rest is thus acorded.

All cases of peptic ulcer operated upon should be followed by medical treatment just as a broken leg no matter how well set should have a splint. It is only by viewing each case of peptic ulcer individually, with-

the more insidious and even greater danger out regard to the partisan views of treating all cases by medical treatment or all by surgical treatment, that we can benefit the greatest number. We must consider not only the danger of the operation, but the dangers of perforation and hemorrhage, and the more insidious and even greater danger of transition of a benign lesion of the stomach into cancer. This is the more serious when we consider that there is no known treatment that will save a patient with cancer of the stomach except excision of the cancer.

THE RESPONSIBILITY OF THE MEDICAL PROFESSION IN PUBLIC HEALTH ORGANIZATION *

By J. E. MONGER, M. D.
State Health Commissioner of Ohio
Columbus, Ohio

IT IS NOT EASY to defiine Public Health. It's interests and activities are so broad in their application that a definition which clearly expresses them is practically impossible. Probably the best definition, for the purposes of this paper, would be "The application of the principles of Preventive Medicine to control the community problem of disease."

While at times many of its activities spread somewhat beyond this narrow limitation, yet in general all Public Health work is predicated on the application of these principles. The physician's problem is the problem of his individual patient's diseases and welfare, and the Public Health man's problem is that of community disease and community welfare.

It is entirely impossible to disassociate community disease and community welfare, and individual health and individual welfare for after all the community's welfare is dependent on the presence or absence of disease in individuals. In other words, the Health officer tries to do for the community what the doctor tries to do for the individual.

"It little matters what one looks at,—It is what he sees that counts."

This is a somewhat cynical way of saying that unless we,—and by "we" I mean the medical profession,—take the trouble to see all of the objective to be attained, the circumscribed point that we do see may give us a false impression.

We physicians have long been looking at the Public Health Movement, and I am quite sure that many of us do not see its whole purpose.

First of all, the Public Health Movement is relatively new. And second, most of us received our training at such a time and under such circumstances that we come naturally to regard our life-mission as one of treating diseases, and not of preventing them.

The birth of real Preventive Medicine came in the early Eighteen and Eighties with the revolutionary discoveries of Pasteur, Koch, Von Erlich, and many others who made epochal discoveries follow other discoveries, each even more alluring in its prospect of furnishing relief from the great plagues which have beset mankind from time immemorial.

We older men remember the "Era of Golden Promise" of Preventive Medicine, when all of us visualized a happy day when mankind would be saved from disease and death by the simple process of boiling the germ or shriveling it with some antiseptic.

This was followed by the dream that for every germ an antoxin could be produced.

* Read June 21, 1927, at the Sixtieth Annual Meeting, West Virginia State Medical Association, at White Sulphur Springs.

Succeeding decades, with the realization that the fight against disease meant something more than these simple measures, marked an era of disappointment.

The World War and the influenza epidemic of 1918 taught the fundamental lesson that the fight against disease was a matter of organization; that scientific knowledge must be organized; that many other factors must be marshalled, including community effort, to control sanitation; that there must be individual application of simple laws of hygiene. In other words, that the business of disease prevention must be made a matter for specialized effort along all these and many other lines.

The result of the physical examination of draftees for the World War, with the appalling percentage of unfit, awakened the country from its apathetic sense of self-satisfied bourgeois feeling of self-sufficiency. It came as a shock to realize that our boasted physical superiority was, after all, not founded on facts . Defects of all kinds cropped out in numbers not even suspected by ourselves, and the pitiable thing about it was that an analysis of the causes of rejection shows that a very high percentage was unnecessary, in that the defect itself, or its underlying cause, should have been found and corrected long before.

The accomplishment of the organized fight against tuberculosis, the marvelous results obtained when a minimum of effort was expended toward the reduction of infant mortality, the reduction of blindness through organized effort,—these are only a few of the many achievements that taught society that disease prevention was not alone the business of the doctor, but was the business of society in general.

We were taught, and in pity be it said are now taught in most instances, that our business was or is the business of the cure of disease. The change from the "I cure" to the "I prevent" of the present and future has been so insidious and gradual that many of us have not sensed it, and we go along blindly following our old teaching, and at times resentful of those who point out this change and the necessity of rearranging our whole professional structure.

I think the laymen have been quicker to sense this change than have the members of our profession, for it is not unusual to find that public demand for preventive measures is far in advance of professional acquiescense to their application. This statement will, no doubt, shock many of you, and no doubt it does not exist in your fair State. But, unfortunately, it does exist in my own State. True, as there is developed a better understanding, this aloof attitude in some instances, or actual opposition in others, is decreasing; but, nevertheless, it does exist.

When I came down here I had two courses open to me. I could have indulged in platitudes, and I would have made a set speech and you would have forgotten all about it in twenty minutes. Instead, I intend to tell you the truth, as I see it, about the Public Health Movement, and to try to make you see that you have a direct responsibility, and that if you meet this responsibility you have a wonderful opportunity.

Now, it is much easier to say nice and pleasant things, but that is not the sort of thing that is needed today. We must look this problem squarely in the eye, and meet it, not as a matter of expediency, but as a matter of professional responsibility and permanent policy.

Let me illustrate what I mean by a concrete example. On the first of May, two years ago, I attended a big community affair which was in many regards the most important community celebration I ever attended. An Ohio county, with a fairly good sized city, had been doing intensive public health work. This work had been started four or five years ago with a large organization, much of it paid for by private philanthropy. It is true that at the beginning many things were attempted which we know were mistakes.

It was managed in its beginning by a voluntary agency, which, in its enthusiasm to bring the millennium "just around the corner", did many things that well-grounded Public Health Administration did not then,

nor does now, countenance. But mistakes or no mistakes, the movement produced definite, certain and tangible results.

The test started with babies, the preschool child, and the school child. All were examined. Their defects were listed and a staff of nurses and pediatricians hammered away until these defects were corrected. Under-nourished children received special care; the parents of over-nourished children were advised as to care in diet and habits of their children; bad tonsils and adenoids were removed; dental defects and ocular defects were corrected; crippled children were operated where operable. In fact, everything was done to bring the individual child up to a physical standard.

This standard when reached, and if accompanied by maintenance of a minimum of schoolroom of efficiency and by a high standard of playground conduct, was rewarded by a blue ribbon. School was played against school, and a competitive spirit was engendered. When a school had 100 per cent defects corrected, that school was awarded a pennant.

On Child Health Day, May 1st, a big parade was organized by the American Legion and by the Chamber of Commerce. Bands marched, schools wore distinctive uniforms, beautiful boats were provided, the children were assembled by townships, while the Governor and many other State, County and City Officials reviewed them. Thirty-six hundred Blue Ribbon Children were in line. I tell you it was the most inspiring thing I ever saw. Ruddy-faced, happy, buoyant, proud, health radiated from every face.

The community there knew real community pride, and the Chamber of Commerce today advertises the city and county as the "Home of Blue Ribbon Children." It was and is one of the finest examples of constructive community effort of which I have ever had knowledge.

Three years ago the objectionable things which had previously been done were no longer being done. The organization became a part of the official health organization of the State, and the same broad policies that obtained all over the State have been put in force. The old clinic and free treatment abuses were corrected.

Now, where is the fly in the pretty white jar of pretty white ointment? Listen! This is the fly. I have told you what happened two years ago. This year at a dinner given on the occasion of the community celebration of a bigger and greater demonstration, the Mayor in a public address to assembled health officials made this statement:

"This thing has been popular, immensely popular with everybody and with every class of citizen but one, and I am sorry to say that that class is the Medical Profession. They look on it with doubt, and are consistently objecting.

"I see wherein they are wrong, and while I want their support, still if I cannot get it, I intend to give local public health administration our full official support because I believe it to be the most important factor working for a healthy community today and a better community in the future."

Don't you see how important, how fundamental to our profession this thing is? This man's viewpoint is that of a broadminded, public spirited citizen. One less broad might charge, if he did not openly say, that the opposition on the part of the local medical group was due to selfishness. Personally, I know that is not true. I know many of the profession personally, and they are high-minded, ethical gentlemen who are more than willing to do their part. There are some who have been so blinded by early mistakes, so prejudiced by being shunted aside in the early days, that they simply will not see the local public health opportunity in its true light and its true worth.

Every one of these physicians has been financially helped. People now go to them for advice, and ask how to keep themselves and their families well. An aroused community interest in health supports a fine hospital, and it is much better supported than ever before. There is a hundred-fold more pediatric work done now than was done five years ago.

The dentists have been more alive to the situation than we have been, for they have

capitalized community education and today, dentists are doing more dentistry for children than ever before, more prophylactic dentistry than ever before.

True, people had abused free clinics at the start. Regardless of their willingness or their ability to pay, they were not only diagnosed, but were advised and treated.

Now, what is fundamentally wrong?

First, we as doctors, falsely believe that community health is our business and we resent others "butting in", to use a slang expression, on a field we regard as our own. We believe this because we do not realize that we have other responsibilities than those of treating the sick, and if we do not exercise these responsibilities someone else will fulfill this mission.

There are only three reasons for the existence of the State. These reasons have been recognized by lawgivers and statesmen from time immemorial. The first is the preservation of life and health. Moses, Disraeli (Lord Beaconsfield), and the framers of our own Constitution recognized its importance, and every law-giver and statesman from the beginning of law have sensed this.

Does it seem strange that these men so recognized this importance at a time when the phrase meant so little as compared to the possibilities of today, and that today, with all the opportunities for its fullest realization it is so hard to convince statesmen of its truth?

To apply this principle locally we have waged a big campaign in Ohio to eliminate diphtheria. We are carrying on through local health departments a movement to have every child immunized.

We go to the County Medical Society and explain to them, and in most instances we not only get their consent, but we get actual help. In a few instances where acceptance has not been readily given, or where it has been actually refused, we give the Schick Test to the children and give the non-immunes a letter to their family explaining in detail the necessity of taking the children to their family physician for immunization.

And what happened? In a group of counties where this plan was followed, less than two per cent have been immunized after two years.

Now, what does all this mean, and what does it portend? Diphtheria goes in waves. It comes with a peak every five or six years, and then takes a sudden drop to a low ebb. We are now in the low part of the curve, but when cases begin to increase, and deaths begin to increase, intelligent people are going to ask the pointed and unanswerable question: "Why did my child have diphtheria?"

"Why did our city and county have an epidemic when an adjoining city and county did not have it? Who will lose prestige, for the record is an open book.

I tell you the medical profession is losing the biggest opportunity of its life when it does not get behind public health where it exists, or see that it is created where it does not exist.

Ohio is trying an experiment in public health administration. Seven years ago the legislature passed a law that created the most advanced scheme of health administration ever attempted. The pessimists among health administrators speculated on just how long this idealistic thing could last. "It won't be long now," was their feeling.

Four years ago our forty-eight full-time health units represented nearly one-third of those in the world. Today it represents only them, and twelve decreased. The other dis- about one-sixth of the total number, which shows the growth of the idea.

We did not originate it. The first full-time unit began ten years before, but we were the first state to adopt it on a statewide basis. We haven't smashed yet, as the croakers prophesied we would, and what is more, the idea is growing. Out of the sixty-five county and city units that have changed their budgets for 1927, fifty-three increased them, and twelve decreased. The other districts continued their budgets without change.

When I was called upon to administer this big machine there was thrust into my hands a tremendous responsibility, and no one could have had so few qualifications. Aside from three years as head of the Bureau of Vital Statistics, I had only the ex-

perience gained in fifteen years general practice in country and city. Knowing my limitations, and having sense enough to keep quiet and "not rock the boat", I watched the problem of organization and I soon came to the conclusion that public health needed a directing hand that understood its medical profession.

In other words, public health needed the feeling of mutual support and mutual dependency of not only the official organization, but the practitioner. It has not been an easy job, and I well know that I have not succeeded. In the language of the street, "I have plenty of trouble," but there are signs of a rift in the clouds and the graying of the dawn of a new day.

First, we (and by "we" I mean my own and the field staff) decided the best way to "sell" public health to the doctor was to do the fair, just, and equitable thing by him, and not do very much talking about it.

We have adhered to this policy, when by so doing we have in many instances lessened the support of voluntary agencies and groups, and the loss of this support was not compensated by support by the profession. The fundamental idea of that policy is that it is our duty as health administrators to educate, and when necessary to do this, to demonstrate, and that it is the function and the prerogative of the profession to treat. We have hewed strictly to the line of this policy.

This is, we feel, the best policy at this time, but it is not sufficient for we must have the interest of the profession to a degree that it will take up the work and continue it when we have once demonstrated its value to the public.

Our clinics are, in truth, diagnostic clinics. When we conduct a diagnostic chest clinic, our people first of all call on all the doctors of the community. We then present the plan to the county medical society and get their endorsement. Outstanding specialists are obtained, and so far removed from a community that they will or cannot exercise a selfish influence.

Patients are invited in. The local profession is asked to attend, and they do attend. The patient is examined, his case is discussed with the physician, if present, and the findings and conclusions given to the doctor whether present or absent. The patient gets his information from the family physician. In this way the prestige of the physician is not lowered. If the patient is an indigent case, the health officer looks after him, or local physicians donate their services.

Now, you will admit the fairness and justice of this policy, both to the patient and the physician. This policy controls in all our clinics, whether it be pediatric, orthopedic, chest, or any other kind. This policy is breaking down opposition, but it has been a long slow process, and even with it in force I assure you we may expect and have lots of trouble. Over-zealous nurses may occasionally make a slip; a sanitary inspector may over-step the bounds of common sense; personal friction and jealousy between personal and individuals may fan a smouldering blaze, which may mean misunderstanding.

I do not want you to think me egotistical. What has been accomplished has been done through team-work by the whole staff, both in my central office and in the field. We have forty-seven full-time county health officers, and seventeen full-time city health officers, and we have sixteen full-time men who administer a city and a county. Each one of these officers has a definite part to play.

It is my job to administer the nine divisions of the department, and to coordinate the efforts of the specialists who direct each one of the divisions, so that we may best spend the money the legislature gives us to meet the greatest and most pressing needs.

I am not a public health man, and I am not trying to be one. I am keeping the viewpoint of the physician, and I am endeavoring constantly to get the medical profession to see not alone its opportunity, but to exercise its definite responsibility. So if it appears that I scold you as doctors, please do not feel that a health man is "razzing" you, but rather feel that one of your own number who has had an unusual opportunity to see both sides of the picture, is earnestly trying

to make you see the other side, too, as well as our own.

It doesn't make a continental's difference whether we, as doctors, like the public health movement or not. It is here, and it will stay, and it will grow regardless of any attitude we may take. Tell a mother that twice as many children are dying as should die during the first year of life, and you arouse her interest. When people realize that diphtheria, scarlet fever, typhoid and smallpox are largely preventable, and they are not being prevented, they will ask somebody "How come?" And that "somebody" will be we doctors. We have arrogated this thing to ourselves, and we will be held responsible.

Let them know—and they are rapidly finding out—that the tragic deaths from heart disease, the tremendous toll of nephritis, is due largely to conditions that could have been prevented by the simple protective measures that could have been taken care of in childhood, and "somebody" must answer many pointed questions.

We hear a lot of "sob stuff", and see a lot of "pulling of hair" and "gnashing of teeth", especially during legislative sessions, about "cults' and "isms." Did it ever occur to you that the reason we seem to be losing prestige, and that the quacks and cults are growing, is because the public is losing confidence in the medical profession? Let's be frank about it. We haven't quite measured up to the public's conception of a true healer.

Some Sunday morning walk by one of those marble palaces that represent the shrine of the religio-medical cult, and see the type of people represented by the outpouring throng, and have the courage to ask yourself "Why?" Look at the crowded offices of the "pathists" of whatever kind, and ask yourself "Why?" Run over mentally the constant attacks on our Medical Practice Acts, and ask yourself a lot of "whys", and try to have the courage to answer them.

The truth is that many of our troubles are due to a gradual loss of the old ideals that raised our profession to a position in public esteem not equalled or excelled by any other learned profession. This old type of family doctor has gradually faded from the picture, and all who stop to think, all who love our profession, and all who cherish its ideals regret his passing. He was not only the adviser and confidant as might concern physical infirmities, but he was the personal adviser, friend and counsellor in all times of stress. He was, and still is, the finest type of American citizenship. It was his lot to give his all with little thought of regard, with no hope of gaining a richer compensation than the high regard in which he may be held by the neighbors he served in sickness and in health.

This type of doctor had little concern with inroads of "cultists" and "pathists". His people believed in him, trusted him; they gave him not alone their confidence and trust, but their unflagging belief in his powers, their personal admiration and their love.

Contrast that type of doctor with the type who, before you had known him fifteen minutes would slip you the information that he paid so many thousand dollars income tax last year. Contrast the old type with the all too frequent commercialist type of today. Not long ago at a state medical meeting it was my privilege to have dinner with a fine type of gentleman of the old school, his state association, and the American Medical Association, as well as many other organizations national in scope. I had been a student of his, and through the intervening years I have kept in close touch with this teacher and author of international fame.

During our dinner he bewailed the growth of the spirit of commercialism, the tendency to give unfortunates the "merry whirl" of sending them from one so-called specialist to another, until finally in disgust they become mad devotees of this or that "ism" or "pathy". After this highly illuminating picture of the changes, we went into the meeting to hear the oration of a nationally known doctor who is an ultra modernist. Somehow, his talk seemed to better fit the "walking delegate" of the plumbers' union than it did one to whom the profession has a right to look for inspiration. Instead, he made a bitter, vituperative attack on the

public health movement, and quoted excerpts from talks by public health men to substantiate his claims. He reduced our profession to a dollar and cent basis. The peculiar thing was that just a few months before, he made an address before a large lay group, that met with great popular acclaim, in which he expressed views diametrically opposite.

It is our belief that the highly developed spirit of commercialism—the spirit that weighs any movement in a selfish balance—is the one big thing that is weakening us as a profession today. It has been my unfortunate lot within the last two years to hear myself and associates in the public health field bitterly castigated on four different occasions. Three of these castigations were delivered when those who consigned us to the "outer darkness" were our guests, and we could not with propriety reply. Oddly enough, in three instances the self-appointed critics were three of the men who were greatest beneficiaries of the terms of our workmen's compensation law.

I do not say this with any bitterness, except that their doleful wail of "state medicine", or such other bogey as they set up, men who accepted employment from great industries and from which, in at least two instances, the size of their fees paid from the State Compensation Fund reached the point of newspaper headline publicity.

Boiled down, the whole thing of state medicine is one of medical economics, and those who profess to fear it do not know their medical economics. Many sense that there is something seismic in character happening to our profession, and failing to sense the cause of this change, they refuse to think, they become panic-stricken, they begin tearing their hair, shrieking that this terrible goblin of state medicin will "catch you if you don't watch out". And the pitiful part of the whole picture is that it will.

The best defense, however, against this thing if it is to be feared, is a well conducted health department.

None of those who pretend to fear this goblin are quite clear as to what they mean by state medicine, and the peculiar thing is that because the word "clinic" has been put onto so many public health activities, they jump to the conclusion that public health administration is the entering wedge.

We are not German. We are not English. We are Americans, and you simply cannot tell an American that he must do thus and so. If you do, he will not do it just to show you he is an American. The history of compulsory vaccination shows this. England and Germany have it, and it succeeds. America has it in spots, and it fails. England and Germany have the "penal system", and unbiased observers say it works. This does not mean that it would work in America. It would not.

Tell an American he must go to a designated physician, and regardless of what his opinion of that particular doctor's ability might be, he would not go. The "contract system" has failed wherever tried for this reason.

The whole thing is what the old-time doctor called "a state of mind". No intelligent person can believe that the practice of medicine of the future will be the same as the practice of today or yesterday. It is bound to change just as it has changed in the last decade. This seismic change that has started has been one of somewhat rapid evolution. It began with the beginnings of preventive medicine in the early eighties, and gained tremendous momentum during the decade that just preceded this. It was and is the change that means that our business is not alone to cure, but we must prevent disease. It means that the modern conception of disease is a negative thing, and that its prevention is positive.

I can best illustrate my point of view by reciting to you my own personal observations.

Twenty-five years ago, lacking one week, I graduated in medicine, and being poorer than the proverbial church mouse, who at least had a home, I located in a hamlet in western Ohio. What happened in that community is just what happened and will happen in every community, only here the lines of cleavage are better marked. I struggled along with a rough-and-tumble

country practice, without hospital facilities, and without consulting service of value to me—on my own resources|

After seven years a bright young countryman entered my office as a student, and I welcomed the opportunity to brighten up on anatomy, physiology, chemistry, and during the interim between his years at college we had great fun in going over his work for the succeeding year. He graduated with honors, served an internship, and came back home. I turned my practice over to him and moved to the county seat. The picture of my experience and his experience in that community pretty well illustrates the point to my story, and I know it well as I get my greatest pleasure in visiting with him and my old clientele.

In 1925 he said to me: "John, I am going to leave here. There are not the opportunities here that there were in the old days. When you were in practice here you counted on about so many cases of typhoid each fall; you were busy with diphtheria, tonsilitis and rheumatism in the winter and spring, and in the summer dysentery and enteritis kept you employed. I haven't seen a case of typhoid in eight years. Diphtheria only means two or three visits. I have taken out nearly all the kids' tonsils and they don't have tonsilitis. I have cleaned up focal infections and bad teeth, and seldom see a case of rheumatism. Dysentery is unknown, and only an occasional attack of diarrhea and enteritis. In fact, over 70 per cent of the work you did is now nonexistent."

This was all true. When I went into this thickly populated rich farming community there were three doctors in my own village, and ten others within competitive distance. Today in the same area there are five doctors.

To make a long story short, the young man was mighty blue, and confessed that to make a living he had to do many operations in the homes, which he felt he should not do under the circumstances. And to his credit, he was doing them well, with a surprisingly low mortality. He is a good diagnostician, a good general surgeon, who had kept up to the minute with new advances and had the confidence of his clientele to such a degree that he could get consent for early operative interference.

Well, it looked bad. I began to quiz him. The first question was:

"Do you do any immunizing against typhoid?" His answer was "No." "Are you Schick testing and immunizing against diptheria?" "No." "Are you doing prenatal supervision of prospective mothers?" Again, "No." "Are you doing real honest-to-goodness pediatric work anl supervising your well babies?" Again, "No." "Are you doing any examination of well people and furnishing them with supervisory service?" Again, "No." "Are your school children being sent to you for correction?" "No."

All through the category of public health and preventive medicine he was not realizing a dollar. Finally he became impatient, and rather testily pointed out that while he realized that all this should be done, that he could not educate the people to have it done and be willing to pay for it. And right there I nailed him! This county had indifferent public health service, with an aged physician as health officer, and one nurse for 800 square miles, and 35,000 people.

I pointed out to him that a good, well-functioning health department would teach prospective mothers the value of prenatal supervision and supervision of early infancy; the importance of physical examination of well people; the value of correction of defects; the importance of immunization against typhoid, smallpox and diphtheria.

I convinced him that there are today more potentialities for service in that community than there were fifteen years ago, and that the people are better able and more willing to pay for such a service.

"Well, how can this be brought about?" "Easily," was my answer. "Get yourself and some other physicians with vision appointed on your board of health, and see that progressive laymen are also appointed."

To make a long story short, they now have one of the best county health departments not only in Ohio, but in the whole United States, and this doctor is an active, interested member of the board of health. They have a full-time, up-and-doing county

health officer who receives $5,000 a year, and earns it by working sixteen hours a day. The old doctor who was formerly health officer is his assistant at his old salary. They have five nurses, a clerk and a sanitary officer. Today if you go into that county and talk state medicine you will get laughed at for your trouble, and this young chap's business is not for sale.

At a recent meeting of the County Medical Society inquiry was made as to how the work of immunization against scarlet fever was progressing. One doctor, wo is president of the County Board of Health, reported that he had done eighty immunizations that month, and two other doctors from the same territory where there was a slight outbreak of scarlet fever reported ninety and eighty immunizations, respectively. They received one dollar a shot, and it was much easier to earn this money than it would have been to earn a like amount treating cases of the disease.

I followed that epidemic with acute interest, and they stopped it "dead in its tracks." In the families representing those not receiving preventive treatment, thirty-nine new cases occurred in sixty-eight original cases, or 57 per cent; and in seventy-four cases where immunization was used there were six new cases.

The doctors were satisfied because they knew they had done a good, modern, up-to-the-minute piece of work and were paid for it; the people were satisfied because they realized they had a health department and a medical profession who were giving real service; and best of all, there are several little kiddies in that community happily enjoying their little lives, who, no doubt, would not be enjoying themselves under the old regime.

Ten, twenty or even forty years in the future those persons in whom the disease was prevented will not show as high incidence of heart disease and nephritis as they would have had had this work not been done.

Don't you see what all this means? This is not a fanciful tale told because it makes a good story to drive home a point, but it is the truth. All over our fair state it has been, is, and will continue to be reproduced. It is the old, old story that the doctor of today must sense his responsibilities, and if he has discernment enough to sense them, he will cash in on a wonderful opportunity.

Remember, I am not emphasizing the cash value of this work to the doctor, but it is a corollary that naturally follows that, stripped down to its final analysis, preventive medicine means lessened income from treating disease because the diseases needing treatment are decreased, but it also means an increased income from prevention because the patient is not only willing, but able to pay.

I am not arguing about a theory or something in the far distant future. Public health is a reality. It is here now, and public demands for increase of its functions are insistent.

To repeat: Whether we like it, or not, it doesn't make a bit of difference. The thing we have to make up our minds about is whether we are going to "buck" it and fight it, or are we going to help it.

All of us know that there is a change in medical practice. There are lessened opportunities on one hand, but on the other hand these lessened opportunities open up new fields of endeavor that promise greater opportunities for real service. We will all be practicing preventive medicine in the future.

As a health officer I know that I cannot render my best service without the cooperation, help, and support of the doctor, and as a physician I realize that under the modern conception of medical practice I cannot render the best service without the help of the health officer.

Let us be fair about the public health movement. Let us see it as a big thing, and in a big way. It is new. We in public health work have made mistakes, and will make many more, but these mistakes are only incidents, and with your help and cooperation we will make fewer of them.

Let us not look at this thing with myopic vision which magnifies a mole into a mountain, but rather stand back and see the whole glorious picture. It is our game. It is distinctly the doctor's game, and don't let us quarrel about the incidentals and let someone else play the game. "It is not

what we look at. It is what we see that counts." I would like to have entered further into that interesting field of medical economics. I would like to have gone into the figures of the cost of sickness and death, and the pitiable amount we spend per capita, both by public and private expenditure.

As much as we are doing in Ohio, we are only spending 46.7 cents per capita. On fire insurance we spend 80 cents in prevention and insurance for every dollar of loss. On sickness and death prevention in our ten largest cities we spend 7.3 cents to the dollar loss, figuring the cost of sickness and death due to only a reasonable percent of those which could have been saved.

All this is interesting, but I did not come down here to sell you public health. I came down here to awaken you to your responsibilities, and to picture to you some of the opportunities.

In conclusion, I am going to quote from Dr. Wendell G. Phillips, president of the American Medical Association last year, who in an address at Chicago recently, said:

"Our views of future medical education call for the output of men whose scientific training shall smack less of the mechanical and more of the human. They must be taught to think more in terms of life, health, and humanity, than of disease and death."

CARCINOMA OF THE STOMACH *

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FROM March, 1920, to January, 1927, 6300 autopsies were perfored at the Philadelphia General Hospital, of which 101 had carcinoma of the stomach—a proportion of 1.6 per cent. There were 87 white, 13 black and 1 Japanese. There were 70 white males distributed as follows: 30-39, 3; 40-49, 4; 50-59, 24; 60-69, 24; 70-79, 11; 80, 4. This accords with the usual finding—nearly 70 per cent of all cases occurred between 50 and 69 years of age; there were none under 30, and 4 over 80. There were 17 white females, distributed as follows: 40-49, 4; 50-59, 1; 60-69, 8; 70, 4. The number is too small to justify any conclusions.

The black males were distributed as follows: 40-49, 1; 50-59, 3; 60-69, 4; 70, 1, and the black females: 30-39, 1; 40-49, 2; 60-69, 1.

The classification of cancers of the stomach is far from satisfactory. All these cases were examined histologically, but the interpretation of certain pictures probably differed in some cases. It is, of course, impossible to get behind the returns, and as the histological work in the pathological laboratory of the Philadelphia General Hospital is done with great care, and is probably unsurpassed in any pathological department, and was done moreover, under Dr. Krumbhaar's supervision, it may be regarded as reasonably satisfactory.

Fifty-five tumors were classified as adeno-carcinoma; three as gelatinous carcinoma; two as carcinoma simplex, diffuse in character; eleven as scirrhus; six were medullary; three were papilloma; eight were not definitely named, but were described as columns of epithelial cells in a dense fibrous stroma; three were not diagnosed, and there was one prickle cell tumor; one atypical; one myoma and one sarcoma. This grouping agrees with Ewing's findings, who also finds the adeno-carcinoma the most frequent; but others have reported different proportions; thus Welch, quoted by Ewing, 64.8 per cent of the medullary type in 1221 cases. The difficulty of exact diagnosis is indicated by the mixed types reported, three of adeno-carcinoma and scirrhus; two of adeno-carcinoma and mucoid; and one of adeno-carcinoma and medullary. Eight cases showed such extensive involvement of the stomach that perhaps the term linitis is justified, although only one case is described as a

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leather-bottle stomach, and the description of some of the others, such as diffuse fungating mass, nodular with ulcerations, probably rule it out. The term, originally suggested by Brinton, has been applied to at least four pathological conditions and should not be narrowly restricted.

The classification of the location of the growths can only be done in a general way. Twenty-eight were located at the pylorus, eleven involved the pylorus and the neighboring tissues, some extending to adjacent organs, particularly the pancreas; this constitutes 39 per cent, an additional eight were situated on the lesser curvature near the pylorus, and might raise the percentage to 47 per cent. Six were located at the cardia, and eight more involved the cardia and neighboring structures, that is, 14 per cent. Four were on the anterior wall, four on the posterior wall, nine on the lesser curvature, seven on the greater curvature, and three were multiple. One of these merits brief description. Case 8417, the stomach shows three rather definite, but confluencing tumor masses involving the inferior, posterior and superior portions. The lowest border of the lowest mass is 7½ cm. above the pylorus, and the upper border of the highest mass 7½ cm. below the esophagus. These tumors consisted of nests of epitheloid cells, with large vesicular deep-staining nuclei. Mitotic figures were frequently seen. No histological diagnosis was made.

Case 16,958 had two discrete masses, both adeno-carcinomata. Three tumors were located in the central portion of the stomach; it is not even stated whether they caused constriction or not. The location of one tumor is not given, an indication that even good pathologists may err at times. The description of metastases is notoriously inaccurate, even aside from the fact that many metastases are microscopic, and that the skull is often unopened. Nevertheless, it is interesting to note that the pancreas was involved four times, the adrenals four tims, the kidneys twice, the lungs seven times, the brain once, the spleen three times, the esophagus twice, voluntary muscle once, the prostate gland once, the female genitalia once, and the liver and lymph glands many times. In fourteen cases, including the myoma and sarcoma, no metastases were found. One patient had another primary carcinoma of the face, and another one of the larynx.

The cause of death was given as carcinoma of the stomach in 60 cases; lobar pneumonia in 11; broncho-pneumonia in 11; and various other lesions, particularly septic lesions in 10; tuberculosis in 2, and one patient died immediately following an operation. The results of operation were noted, although it is obvious that autopsy material is unfair as a test of the benefit of surgery. Eighteen operations were performed; death usually occurred in a few months, and there was no evidence of benefit. One patient lived two months after a gastro-enterostomy. One patient had a jejunostomy, but feeding through the tube was painful, and no benefit ensued. At one operation the stomach and duodenum were declared normal, but at the autopsy two months later a huge adeno-carcinoma was found in the stomach. At another operation a diagnosis of carcinoma of the head of the pancreas was made, but at the autopsy the pancreas was normal, and a large tumor of the stomach was found. This only illustrates the difficulty and sometimes the uncertainty of exploratory laparotomies. At one operation a perforation was found extending into the liver.

Complications were of some interest. One patient had lead poisoning of some years duration, which is a point against the treatment of carcinoma by lead; one had tabes dorsalis with apparently typical gastric crises. In one stomach a diverticulum was found. One patient had an abscess in the heart-muscle—a very rare condition; another an abscess in the groin, and a third multiple abscesses in the kidneys.

Special attention was paid to the question of ulcer and its possible relation to a subsequent carcinoma. It is common enough for tumor-tissue to ulcerate or to undergo necrosis, and in 21 cases such ulcerations were found, some extensive, some multiple.

The following cases are suggestive of ulcer preceding the carcinoma:

7190. A large ulcer in the pyloric end, extending downward to the sphincter and measuring 7x8 cm. The edges have been infiltrated by the new growth, and the floor is greyish-white and fibrous.

6022. A small ulcer was found at the operation, one-eighth inch from the large mass. It was burned out by the cautery, and the hole closed by sutures. At the autopsy the pancreas was found adherent to the stomach and forming part of the floor of a large ulcer.

7239. Below the esophageal opening is a large ulceration with necrosis and below this a small ulcer measuring 2½ cm. in diameter.

7749. On posterior wall within 6 cm. of the pylorus is an old gastric ulcer without gross evidence of malignancy.

7847. A large ulcerated area begins about 4 cm. from the cardia and extends inward from the lesser curvature. The edges are demarcated, indurated, terraced. There is no sign of erosion. It is hard and indurated and the neoplasm has apparently originated in this ulcer.

8500. At the operation a perforated ulcer was found in the anterior wall. This was closed by sutures, and the patient died the next day.

8833. Prominent ulcerative patches were found in the wall of the stomach.

9153. Mass on base of old ulcer and is apparently a carcinomatous degeneration from an old peptic ulcer.

9225. A large ulcer the size of the palm of the hand is near the pylorous, the edges and base of which consist of a very firm, tough, pearly-gray tissue.

9999. Two inches from the pylorous is a depressed ulcer. The carcinomatous infiltration extends 10 cm. from the pylorus.

Of these cases two may be regarded as instances of a gastric ulcer preceding the development of the carcinoma; and two others are highly probable, although it is not certain that the ulcer was the site of the new growth.

Nothing can be learned about treatment. Two patients received deep X-ray therapy without benefit. Radium treatment was not tried, although there is an ample supply of the element in the hospital. This only accords with my own experience with private patients; all of those for whom radiotherapy has been employed have done badly, perhaps not worse than with other methods of treatment.

It has seemed of little value to discuss the cause of carcinoma of the stomach. Various mechanical irritants have been employed, corks containing pin-points, wheat beards, but the growths obtained have never certainly been recognized as carcinoma. Parasites have almost ceased to trouble us. None of those suggested have ever seemed plausible—at least not for long, and the theory of Conheim has less to support it now than ever. Trauma alone has a scintilla of evidence, and at best this is slight.

Diagnosis can be divided into two parts, the early and the late. Both are important. Some years ago in a discussion of the treatment of carcinoma of the stomach, a surgeon remarked that the surgeons could cure the condition if the internists would send them the cases in a sufficiently early stage. This may be true, but I am doubtful, but the fact unfortunately is, that neither at that time nor at the present has any method been devised by which the existence of a carcinoma within the body can be recognized. Two years ago Dr. Thomas Kelly upon my wards at the Philadelphia General Hospital tested 50 cases of carcinoma and 50 cases without carcinoma for sugar-retention; but the results were negative. At least there is no evidence that the behavior of blood-sugar will aid in diagnosis. Smithies has studied the various tests with protein substances, and has found that they are useless; and each suggested test, from the time that Neusser thirty years ago suggested that myelocytes in the blood might be helpful, has failed. For the early diagnosis then there are a few symptoms and signs that are of suggestive value only. These are of the symptoms, indigestion—a vague term that may be translated as discomfort after eating, gas and eructation, nausea and rarely vomiting—the evidence of obstruction, by no means always present, visible peristalsis in the left upper quadrant, re-

tention of food in the stomach, the evidence of internal hemorrhage, anema and occult blood in the stools, disturbance of the gastric secretion, usually a slight reduction of the acidity, but no loss of the peptic ferments. Any or all of these signs may fail in a patient that subsequently develops carcinoma of the stomach. Whether X-ray pictures will always reveal an early case I do not know; but at times they are very helpful. The most valuable change in addition to the six-hour retention is a moth-eaten appearance of the edge of the gastric shadow.

At a later stage when the tumor has grown, the diagnosis is sometimes easy. A moveable tumor in the epigastrium that may at times disappear, the signs of obstruction, the progressive anemia and emaciation, the vomiting and the vomitus, the change in the gastric contents, achylia, lactic acid, Oppler-Boas bacilli, rather neglected nowadays, blood, the evidence of metastasis, particularly a large nodular liver, occasionally metastases to the skin, of which I have seen one case. Riegel's telltale gland I do not believe that I have ever found, nor do I come across references to it in the literature. At this stage the X-ray is of the greatest value. The types of change found are numerous, and not always immediately conclusive, but in the majority of cases, enable the diagnosis to be made.

There are certain unusual types of carcinoma which sometimes produce difficulties even in advanced stages, and at other times present symptoms that may be puzzling because unusual. Carcinoma of the stomach may apparently come on acutely. By this I mean that the patient who has apparently been in perfect health, or at least has not observed any symptoms of which he thought it worth while to complain, may suddenly become very sick. There are on record several cases of sudden death, to explain which only an extensive, but hitherto unsuspected, carcinoma of the stomach has been found. In other cases patients with large, nodular livers have asserted that their health has been excellent. I have seen two such cases, and they have run a remarkably rapid course after the abdominal tumor has been discovered.

The onset of gastric carcinoma may resemble that of gastric ulcer. It happens not infrequently that the first symptom is a rather profuse hemorrhage of bright blood, accompanied by secondary anemia, and followed by a period of remission, during which the appetite may be excellent and the patient apparently regain strength with the improvement in the anemic condition. Such a case I saw this winter with two profuse hemorrhages, and a negative X-ray study, and the patient was found to have an extensive carcinoma of the stomach without metastasis or signs of pyloric obstruction. The exploratory operation only served to enable us to make a diagnosis; and after this the patient continued to deteriorate, and in the course of three months died. The gastric contents in this particular case continued free acid until the time of the operation. No histological study, unfortunately, could be made.

One of the most unusual complications is the absence of vomiting when there is pyloric obstruction. Why this should occur, I do not know. I have seen two instances —one in a man who was admitted to my service at the Presbyterian Hospital, with a vague history of some gastric disorder. There was retention and achylia gastrica. A study of the case by X-ray showed apparently a complete retention, and twenty-four hours later the bismuth test-meal was still in the stomach, the merest trickle having escaped into the duodenum. The patient had not vomited. Careful inquiry, repeated, resulted only in the assertion that he had never vomited. An operation was performed on the fourth day of his stay in the hospital, and what appeared to be a large carcinoma of the pylorus was found, which in the opinion of the surgeon was unoperable. There was involvement of the adjacent lymph glands. A gastro-enterostomy was performed, and the patient insisted that he was entirely cured, that all his distress was relieved, and that he felt better than he had for many years. He insisted upon leaving the hospital three

weeks later, and although he was urged to report, and an attempt was made to trace him, nothing further about him was ever learned.

It is perhaps more important to be able to exclude carcinoma of the stomach when the symptoms suggest its presence than even to recognize it when it is there. If there is evidence of pyloric obstruction, the patient has reached middle life, or is even in late middle life, perhaps there is a palpable tumor, and the surgeon may prefer not to operate in view of the apparent hopelessness of the condition. Twice in my experience it has been necessary to send a patient around to more than one surgeon. On one occasion the third surgeon consulted consented to operate, apparently a mass of connective tissue that had accumulated around an ulcer of the pylorus was found, a gastro-enterostomy was performed, and ten years later the patient was still under observation and perfectly well. In this case the X-ray suggested carcinoma. The patient had lost weight; he was anemic, and presented a rather typical picture of cachexia. He had marked gastric retention and frequent vomiting; but the vomiting always contained free hydrochloric acid, and it seemed quite justifiable, if only for palliative reasons, to insist upon an operation.

In another case the results were not quite so happy. This patient had achylia gastrica; pyloric obstruction; he had lost weight. The roentgenologist, Dr. Newcomet at the Presbyterian Hospital, insisted that the picture was that of ulcer, and not of carcinoma, basing his diagnosis largely upon the absence of the wave line and the persistent deformity in the pyloric region. An operation was performed, the X-ray diagnosis was confirmed, and the patient after a stormy convalescence, complicated by alkalosis, gradually improved; but later presented a picture of progressive pernicious anemia; so that although the gastric condition has been relieved, the anemia that remains is by far the more serious lesion.

The prognosis is of interest only from the standpoint of duration. My experience of gastric cancer, the experience of most of my colleagues with whom I have discussed the question, and the majority of text-books on the subject, are agreed that the mortality is 100 per cent. It is reasonable, I think, at the present to conclude that any case which recovers has been mistakenly diagnosed. There have been a few cases of carcinoma which have been supposed to have undergone spontaneous regression; and from which the patients have recovered. This is known to occur in some of the transplanted tumors in lower animals; and it may well be that human beings have tumors that never pass beyond the microscopic stage, and may gradually disappear; but no evidence has ever been supported in favor of this view. The very small number of microscopic tumors which have been supposed to disappear, and in which biopsies have indicated the diagnosis was carcinoma, do not indicate that any hope is justified for this reason. From time to time recoveries are reported as a result of surgery. I once challenged one of our distinguished American surgeons, who told me that he had several cured cases of carcinoma of the stomach on his list, to present the results in the form of a paper; but he never wrote it, or, if he did, it has not yet been read. I have asked many of my fellow-members in the Gastro-enterological Association if they had ever known of a case that had been cured by operation; but I have yet to find one that had. If such cases exist, they should be reported with all the evidence necessary to confirm the diagnosis.

The question of duration is somewhat more uncertain. In the list of cases that I have presented today, there are two, one of which lived two years after a gastro-enterostomy, and the other two years after the diagnosis of gastric carcinoma had been made. This is encouraging. In neither case was there any evidence that some special form of treatment was used to which the prolongation of life could be ascribed, for at least some tumors seem to progress rather slowly. I think it is, however, fair to say that in the great majority of cases, after gastric carcinoma has been discovered, the patient may be expected to die within

six months. I had one patient from whom we removed a small carcinoma of the pylorus, resecting the lower third of the stomach and the upper portion of the duodenum, and finding no enlarged lymph glands in the abdomen. The histological section was typical, and we had great hope that this tumor at least might have been discovered at a sufficiently early stage to justify an expectation of non-recurrence. Nine months later matastasis appeared in his bones, and he died very rapidly.

The treatment is almost as unsatisfactory as the prognosis. Cure is impossible. In spite of many various measures suggested, we are as far from any rational therapy of carcinoma as we have always been. No drugs are of any benefit. Occasionally, as in the case of lead, an initial favorable result is followed by a long series of failures. Bamburger reported several cases which were completely cured by giving the patients mesothorium, but as no subsequent report has ever been made, we can assume that the treatment was ultimately a failure.

The value of deep X-ray therapy in cases of abdominal growths is very difficult to estimate. Some men report satisfactory results; others think that the patients are made worse; but no one has as yet reported a definite, well-established cure.

Some years ago Dr. Pancoast and I devised a small cup, which was fastened at the end of a whale-bone bougie. This cup was made of silver. It was so shaped that its position could be determined by the fluoroscope. Radium was placed in it, the cup introduced into the stomach and applied directly to the cancer. It was a rather disagreeable treatment, and in two cases yielded no results. It seemed fairly plausible, but I regret that I am unable to recommend it.

DISCUSSION

DR. GEORGE D. JEFFERS, Parkersburg:

My experience with carcinoma of the stomach has been so limited that I should be unable even to attempt to discuss this paper. We were fortunate to hear Dr. Jackson this morning and to have Dr. Horsley tell us in his paper what a great organ the stomach is and how the stomach becomes a storehouse of bacteria. There are those who tell us that a man's requirements are 100 grams of protein and 3,000 calories. That was disproved during the war. Then in Colonel Lindberg's flight from New York to Paris he consumed a sandwich and a half, which contained 300 calories and 90½ grams of protein. In both these cases there was efficiency shown all the way through, both mental and physical. It seems to me (while I could not add anything to the doctor's paper as to the treatment of carcinoma) if the great health workers would try to teach the American people how to eat we might prevent a great many cases of carcinoma. Most people consume too much meat (doctors are equally guilty), and most of us consume too great a conglomeration of food at each meal. We eat too much meat, too much preserves, and too great a mixture, which tends to bring about chemical reactions in the stomach, of which Dr. Jackson spoke this morning, with probably bacteria following. I believe if we would try to preach a diet of more simple food to be consumed by our people we might prevent some cases of carcinoma.

DR. J. SHELTON HORSLEY, Richmond, Va.:

This subject of carcinoma of the stomach is an extremely interesting one because, as I said this morning, it accounts for so many deaths. I think that many of us do not appreciate that approximately one-third of all the deaths from carcinoma in the registration area—more than one-third—are due to cancer of the stomach.

Early diagnosis, as Dr. Sailer has so forcibly put, is exceedingly difficult; but it is probably hard to diagnose a carcinoma anywhere except where you can directly see it, and even where you can see it it is difficult. Dr. Will Mayo said, in one of his epigrammatic remarks, that he could diagnose accurately one hundred per cent of his intra-abdominal cases before operation but could diagnose accurately only fifty per cent of skin conditions. He began to check up and found his methods were wrong. In other words, it takes a great deal of imagination to diagnose accurately one hundred

per cent of carcinomas. The symptoms in carcinoma are so different in different cases. We can probably find other reasons for the symptoms or lack of symptoms. Occasionally carcinoma develops along the greater curvature, which is a silent area so far as symptoms are concerned.

In regard to the treatment by direct application to the cancer of radium, it is interesting. But should we expect any better results from the direct application of radium to the stomach, done with the ingenuity that Dr. Sailer has evidenced, than by direct application of radium to cancer of the rectum or by the direct application of radium to growths of the breast? There are certain biological rules underlying all of these things. I do not think we have reason to expect any great amount of cures because of the difference of application of radium in the stomach and radium in the rectum. So far as the diagnosis is concerned, I think we have general principles underlying that, too. It is rather unfortunate, frequently, to report cases of cancer cured by operation, because the only way in which we can get anything accurate is to report the histological findings in each type of cancer. Some are very mild, some very malignant. If we could rule that out we might say that operation for cancer of the stomach, with every precaution taken, such as local anesthesia for elderly people, operation with the cautery as far as possible, etc., does offer hope for cure. But we must take every precaution. Because an occasional case of cancer of the breast with biopsy does get well we do not regard that as a precedent for any surgical procedure but as a surgical curiosity.

DR. SAILER, closing the discussion:

In closing, all I have to say is that we have no evidence that any diet, no matter how extraordinary, has anything to do with the production of cancer. We have, for instance, Eskimos, who in their natural state eat nothing but animal flesh and fat. They are healthy and vigorous. There is a certain tribe in Africa in which the young men from a certain period of their growth, say from 18 to 22, are restricted to a diet of raw meat. They grow amazingly strong and healthy. In Japan the Buddhist priests, for instance, live on a diet of rice and small amounts of fish; they are anemic and rather weak.

Referring to Dr. Horsley's discussion, in all my experience I have never seen a case of undoubted carcinoma of the stomach recover as the result of operation. I have asked my fellow members in the American College of Surgeons if they have ever seen a case of definite carcinoma of the stomach which had been cured by operation. Dr. Bloodgood told me once that he had three cases on his records. I asked him earnestly to report those cases, and he promised he would but has never done so. I am glad to hear that there are cases of definite carcinoma which by operation with extraordinary precautions have been cured.

AN UNSOLVED PROBLEM *

By C. H. MAXWELL, M. D.
Morgantown, W. Va.

ALMOST sixty years ago I heard my grandmother say her uncle died from cancer of the face. For a long time before the cancer developed he felt a tickling at the point where the cancer developed as if a fly were crawling over it. He found himself trying to brush the fly away. I little thought when I heard my grandmother tell of this crawling fly that some day I would feel the necessity of writing a paper, calling on my medical brethren to be on the alert for the very earliest indications of the appearance of malignancy, and to lend every effort to stop the process in its incipiency while there is hope of destroying it before the development is even far enough ad-

* Read before The West Virginia State Medical Association, at White Sulphur Springs, June 22, 1927.

vanced to distinguish it from benignancy. The crawling is what we must look out for. We must be ready to read the symptoms and signs at an early enough day to be of benefit to the patient. We must destroy it before it buries itself like a locust in the tissues and reaches out with its tentacles into the surrounding parts, and makes a cure impossible. May we all be on the watch for the crawling fly.

This great-great uncle of mine belonged to the earliest pioneers of the state. It seems to me that the old established families have more malignancies than the newcomers. My long list of deaths from cancer have all been native born West Virginians, with a single exception—and she was a Canadian. All of my ancestors have been in this state for almost 200 years, and the stock has been peculiarly cursed with malignant growths. In my immediate personal family my father, brother, sister, two aunts, two uncles and two brothers-in-law died from cancer. I am not acquainted with the collateral lines, but feel sure that many of them died from malignant growths.

I tried to determine whether or not there is more malignancy in the Allegheny mountains than elsewhere, but could not collect sufficient data to show it. I sent out many inquiries to old practitioners in various parts of the state, and found that those who had practiced among the old established families had a distressingly long list of malignant deaths. I found only three physicians that had kept a death list, and could give definite information—one of these was an ex-president, and two are now councilors in this association. I found that most of those that replied could give information of some importance extending back a short while, but had no definite data of importance.

Marshall county reported 38 deaths from cancer in 1926. This seems to be the heaviest toll in any of the counties.

Within a year I have lost eleven cancer patients, either as personal physician or as consultant. In looking over my death list I find there are more deaths from cancer than any other disease not excepting pneumonia, and it is this inexorable fate that follows all cancer cases that have fully developed that induced me to prepare this paper to call especial attention to the futility of treatment of cancer in its later stages. With all due respect to surgery, X-ray and radium the fate of all late cancer is the same. Our progress along this line has not advanced in years. We are as much in the dark as to the cause as we were fifty years ago. No cause has ever been demonstrated and to no branch of scientific medicine has been devoted greater energy and skill and time than has been given to this problem. No doubt we are on the threshold of some discovery that will be of great benefit to aid in fighting this dread plague. Science has already practically limited smallpox by vaccination, and typhoid fever by the same process. It has destroyed the dread of tetanus by antitoxin, and diphtheria by toxin-antitoxin. It has made progress against scarlet fever along the same line, and bubonic plague by destroying the fleas, rats and ground squirrels. Malaria has been limited by screening the houses and the destruction of the mosquito in its breeding places. Yellow fever is no longer dreaded. Tuberculosis is on a fair road to be a disease of minor importance. Indeed the French have been experimenting along the line by which children of tubercular parents can be prevented from getting tuberculosis. The great black plague, syphilis, has been reduced to a disease of minor importance by recent scientific application of theurapeutic agents, but cancer still stands as the great unsolved problem of medical science.

A death list may not be a very exhilerating study, but it is one of great interest. In my own list of more than 500, it is surprising and sickening to see the distressing frequency of "cancer of the stomach", "cancer of the face", "cancer of the liver", "cancer of the uterus," and so on, till one is astounded at the long list of deaths in which we have stood by in utter helplessness and watched them passing on with no possible hope of stopping the downward march of death with the means at hand.

It is this abject helplessness that we face, that induced me to put forth my best efforts to insist that every practitioner should use his most alert observations to detect the

very earliest indications of abnormalities in those of cancer age so that we can be in a position to thwart its development with whatever means at our command.

When all medical men fully appreciate the importance and gravity of not overlooking any little indication of developing abnormalities then we can look to a great saving of human life and suffering by combatting the disturbance before it is too late.

It is to be noted that this unaccountable multiplication of cells is called cancer has its origin in traumatism in many traceable instances. Those who are studying the etiology of cancer have traced it at times to some injury at sometime at the point where the cancer begins. It may be that all have the origin in this manner but not noticed or remembered by the patient. Note the mouth cancer induced by bad teeth and the irritation of tobacco. Note the appearance of cancer in the scars and post-operative wounds. Note this same thing, following chronic indigestion.

When we consider that the pathologists at post mortem find at least 20 per cent of those patients that die from "unknown cause" is cancer that has not been diagnosed, it certainly puts us in a bad light for obtundness in making proper diagnosis, or our lack of proper care in studying the cases. In my own death list I have two marked "neurasthnia." Probably if I had been more astute in my study of the cases, I should have marked them "cancer unlocated."

If hospitals with every facility for differential diagnosis and a staff of trained internists make as high as 30 per cent wrong diagnoses, how can the busy general practitioner be expected to make a proper diagnosis in these obscure cases? Let us then be more alert and not give the pathologist opportunity to tell us we are 30 per cent dumb.

In consideration of the rapidly rising death rate of cancer the statement is quite sustainable that of every ten adults now living, one (10 per cent) is destined to death from malignancy, and of all persons now between the ages of 45 and 65 years one in every five (20 per cent) will die its victims.

I asked the State Department of Vital Statistics to give a report on the number of deaths in the last five years from tuberculosis, typhoid fever, pneumonia, diphtheria and cancer. This is the table:

	1922	1923	1924	1925	1926
Tuberculosis:					
Lungs	1092	1048	1136	1076	1112
Other Organs	122	183	161	138	154
Typhoid	283	251	227	334	76
Bronch. Pneumonia	553	691	665	815	821
Lobar Pneumonia	975	1259	779	720	751
Diphtheria	349	327	159	168	162
Cancer—all forms	744	750	808	859	918

While tuberculosis and pneumonia are taking a fearful toll, they seem to run along in quite an even manner. Typhoid, the disgraceful, disgraceful because preventable, still carries off too many, and diphtheria seems destined soon to be a bygone disease. These two preventable diseases killed 2464 West Virginians in five years. Cancer in the same time carried away 4079, while we stood by and watched in abject helplessness as they were swept out of existence. And we are hoping, hoping that the day is near when we can speak of cancer as we do the former scourges—typhoid and diphtheria—disgraceful diseases, because preventable.

Two Frenchmen report a case of direct inoculation of cancer as follows: A medical student withdrawin by aspiration syringe the fluid collected beneath the wound remaining from excision of the breast for cancer, by accident dropped the syringe in such manner that the thus infected needle penetrated deeply into the palm of his left hand. This puncture he cauterized himself with galvano-cautery and thought no more about it, as there was little immediate effect. Two years later appeared some pain in his hand followed by hard swelling at the site of the needle's puncture. A month later appeared sub-cutaneous noduli-left axillary glands enlarged and removed. The growth in the hand enlarged and ulcerated and diagnosis of ulcerative granulomata was made, and such tissue was removed about six months after the first growth was noticed. A month later subcutaneous nodules appeared in the skin of the forearm, and the local growth recurred, establishing beyond

doubt its malignancy. Disarticulation of the arm at the shoulder was carried out; six months later there was no evidence of recurrence of the growth. It is to be noted, however, that the breast tumor was a carcinoma of epithelium in atypical arrangement, but the tumor appearing in the medical student was a spindle-cell sarcoma.

Bock and Rausche's modification of Fonio's method of determining clotting of the blood is as follows: Into 10 test tubes put respectively 1 to 10 drops of a 2 per cent solution of magnesium sulphate. Into each tube drop 1 c.c. of the patient's blood. Leave the test for two hours at room temperature and note exactly the lowest dose of sulphate of magnesia tube which prevented the clotting of the blood; the number of that tube is taken as its index. In normal persons the blood is unclotted in tube 3-5; in the patients with ulcer of the stomach the blood remains unclotted in tubes 1-3 and in cases of cancer the average of tube 7 is reached before the clotting of the blood is prevented.

Reding and Slosse communicate to the Belgian Medical Society in December, 1926, as a test for malignant tumor, an intravenous injection of pituitary extract which frequently excites a sharp painful reaction in neoplasms in activity as this does not take in such tumors when inactivated by irradiations.

Authos describes the Neutral Red serological test for cancer of five drops of a 1 per cent solution of neutral red added to 2 c.c. of the clear serum of the patient. Normal serum turns this a yellowish tint which is not shown by serum of cancerous patient. He claims the simplicity of this test, its 100 per cent positive findings in cases of internal cancer and the constantly negative findings in non-cancerous patients.

Existent from time immemorial, and in all probability antedating the human era (for we find this scourge inherent to all vertebrates, and we know of their existence on the globe, long before any trace of man is found) my subject of cancer may be preeminently old and hackneyed, but until solved, its interest must be predominant for all mankind; for it has—for these millenniums of life—been a foremost aid in the activities of the Grim Reaper—death.

It is beyond dispute that no scourge of our race has so persistently resisted every attempt to curb its menace; none remain so absolutely unknown, as to its origin, its means of propagation, and how it can be resisted, restrained, or eradicated.

We are perhaps unduly inpressed by the limits of our conception of cancer. In fact we have a great acquired knowledge of the subject and have made immense progress towards the final liberation of humanity from this curse. Most of this scientific baggage of ours dates since the Eighteenth Century, and from that period advance is to be measured in geometric ratio up to the present time. Even near the close of the Eighteenth Century, we had accumulating masses of material and knowledge of the gross pathology of cancer.

With the commencement of the Nineteenth Century, we have increasing carefully detailed clinical studies of the many forms of this disease.

With the discovery and development of the microscope, is created the histology of these varied forms; and what is perhaps the first scientific discovery of tremendous importance: the proof that every form of cancer is composed of unbridled proliferation of cells, of which we have the exact prototype in the normal body—either in its embryological or post-natal life. The years of research following this discovery have fully confirmed this fact; have formulated an additional law: that the neoplastic growth of each tissue is the unchecked proliferation of each particular tissue's cellular type; but never yet revealed: Why this unbridled proliferation of these cells?

In these seven words is expressed the entire unsolved problem of cancer. For more than a century the problem has been thus clearly understood; but not one exact fact for its explanation has yet been brought forward.

Two theories are actually before us: the non-parasitic and the parasitic etiology of cancer.

Of the non-parasitic theory, that of Conheim is that such tumors are formed

by embyronic cells, retained in normal tissue and awakened to uncontrolled activity after more or less delay. It is today admitted that this is the true origin of certain tumors (the paradental inclusions that may become the origin of benignant or malignant growths of the maxillae). But even then remains the problem: Why do such cells suddenly show this unbridled activity?

When Pasteur opened wide the door of microbiology, with high rising hope came the parasitic theory of cancer's cause. But the uncounted millions of money, the concentrated research work of the entire world has failed to give us a single fact for any such etiology.

Microbiology has, however, indirectly brought to us the greatest progress in our control of this disease that has thus far been realized: I refer to the concept and scope of modern surgery, which now permits such extensive operation of our organism as to make possible the complete removal of all growth and thus eradicate its menace, when discovered in time.

Intelligent research requires wide organization and unimpeachable, deeply grounded information of every phase of the problem to be studied. As we have realized more and more the menace of cancer, money and men have been supplied, in all civilized countries to investigate and solve this question.

We find that cancer may be considered as particularly menacing the genitalia of the female; and the excretive organs and digestive tract of both sexes.

Careful statistical complications now tend to discredit any claim that heredity plays any role in the transmission of this disease. We find striking collections and data of "cancer families" but controlled by the statistics of cancer incidence in general, and the mathematics of probabilities, we find all of such family occurrence very well explained. At most hereditary non-resistance to cancer might be considered as possible in the light of the experimental work of Slye.

There is at present a wide spread clamor that cancer is increasing as a scourge and cause of death among us, and to this point a few figures are requisite. We submit the cancer deaths in four year periods of England and Wales.

1871-1875	445 Deaths
1876-1880	495 Deaths
1881-1885	457 Deaths
1886-1890	631 Deaths
1891-1895	711 Deaths
1896-1900	800 Deaths
1901-1904	861 Deaths

Figures such as these would surely indicate a decided increase of cancer. But remember that nothing lies like statistics, unless properly digested; and we will later see what this may mean.

The most recently published statistics of the United States, give us the rates per 100,000 deaths for various diseases in our registration area. In the van are: 1924—Tuberculosis, 90.4; cancer, 91.9; cardiac, 178.1; pneumonia, 98.2; nephritis, 89.6. 1925—Tuberculosis, 86.6; cancer, 92.6; cardiac, 185.5; pneumonia, 93.5; nephritis, 96.3. 1909—Tuberculosis, 134.1; cancer, 75.1. 1900 (France)—Tuberculosis, 225.; cancer, 70. 1913 (France)—Tuberculosis, 262; cancer, 82. 1926 (France)—Tuberculosis, 201; cancer, 93. 1900 (Norway)—Tuberculosis, 262; cancer, 90. 1913 (Norway)—Tuberculosis, 254; cancer, 104. 1922 (Norway)—Tuberculosis, 204; cancer, 110. 1900 (Germany)—Tuberculosis, 200; cancer, 72. 1913 (Germany)—Tuberculosis, 143; cancer, 90. 1923 (Germany)—Tuberculosis, 151; cancer, 95. 1900 (Switzerland)—Tuberculosis, 262; cancer, 128. 1913 (Switzerland)—Tuberculosis, 201; cancer, 120. 1922 (Switzerland)—Tuberculosis, 157; cancer, 130. 1900 (U. S. A.)—Tuberculosis, 153; cancer, 62. 1913 (U. S. A.)—Tuberculosis, 147; cancer, 79. 1924 (U. S. A.)—Tuberculosis, 102; cancer, 92. 1900 (Holland)—Tuberculosis, 195; cancer, 90. 1913 (Holland)—Tuberculosis, 142; cancer, 109. 1924 (Holland)—Tuberculosis, 106; cancer, 112. 1900 (England and Wales)—Tuberculosis, 102; cancer, 82. 1913 (England and Wales)—Tuberculosis, 134; cancer, 105. 1925 (England and Wales)—Tuberculosis, 103; cancer, 133. And a very interesting table of an insurance company for one-seventh the population of the United

States and Canada, for white and colored: 1925 (whites)—Tuberculosis, 90.5; cancer, 72.5; (colored)—Tuberculosis, 230.6; cancer, 70.6. 1926 (whites)—Tuberculosis, 85.9; cancer, 74.1; (colored)—Tuberculosis, 231; cancer, 67.6. 1927 (whites)—Tuberculosis, 80.8; cancer, 76.3; (colored)—Tuberculosis, 217.3; cancer, 66.8.

The above figures indicate clearly an increase of deaths from cancer; but we must consider a very important fact in this connection, *i.e.* the holocaust of tuberculosis is of youth, and early adult; whereas the incidence of cancer is the reverse; of slow development and appears in relative old age. Hence it follows that the enormous salvage of youth, that a decline of tuberculosis mortality indicates means that many more are going on to the age where cancer reaps its harvest; and thus without any real increase of cancer virulence, nor of its percent of incidence per year of age, we would actually have, and thus explain, the increased number of cancer deaths by the very greatly increased number of persons escaping from the previous widespread tubercular, typhoid and diphtheria mortality, and reaching the age for attack by cancer. In other words, it may be that the percent of incidence for each year of life for cancer is not at all increased but that the larger number of adults reaching the age of cancer manifestation is so greatly increased as to more than account for the actual larger number of cancer deaths. Such explanation is of tremendous importance to determine, and is widely accepted by our greatest authorities on such subjects. In this connection the following table is striking.

Deaths from cancer compared to percentage of all deaths at ages less than 50:

1908-1912	Holland	14.0%
1901-1922	Switzerland 14.5% to	16.0%
1896-1912	Norway	15.4%
1921-1922	Norway	13.6%
1921	England	12.1%
1925	England	17.0%
1908	Prussia	19.5%
1912	Bavaria	22.0%
1925	France	14.7%
1920-1922	Paris	21.5%

Which means that death from cancer takes from 12 to 22 per cent of all deaths under 50 years of age; but from 28 to 38 per cent of all over that age.

It requires little mathematics to see how greatly the factor of the actually demonstrated prolongation of life in the last decade explains satisfactorily and completely the real increased number of cancer deaths now found in our statistics, without in any way indicating a percentage of increase in those reaching cancer age. No other explanation of the real increase of deaths from cancer is necessary. Every decrease of the mortality of such disease as tuberculosis, typhoid and diphtheria that carry off children and young adults very manifestly increases the number available for future development of cancer.

In our periods of pessimism, depression and discouragement, we need not despair. It may be well to recall where we stand in our struggle for the domination of cancer.

The master minds of our profession, the legacy of the ages, have given us the most complete and extensive clinical studies, of symptoms, and diagnosis of this affliction that exist for any such general disease that takes its toll of death from humanity.

The advance of medical and all allied sciences, that has been so wonderful in this last century, has contributed its full quota to the perfection of laboratory study, detection and determination of cancer, to permit its early, complete and exact diagnosis.

The physician of today who can employ all of these precise and scientific methods is usually well equipped to accomplish a very perfect semiology and appreciation of the real status of his patient very early in the course of cancerous invasion. What we need in this connection now, is that patients realize the imperative need of early diagnosis in case of cancer, and to what extreme measure his relief is dependent upon his prompt resort to us for this determination of his ills.

We are actually masters of pain and therein can play a successful role in the alleviation of suffering in those afflicted. But this mastery of pain is not limited to

palliative therapy, but permits the full resort to either palliative or curative (radical extirpation) surgery to come to our aid successfully.

We are masters of wound infection, and for that reason can unhesitatingly attack all growth in most of the tissues of our organism for its entire removal or biopsy for complete diagnosis.

We are masters of the tissue determination and can in all cases decide the benign or malignant nature of such affection, and to this extent exactly decide the nature and amount of relief to be afforded.

Our surgeons actually effect cure in a possible half of all cases now reaching them promptly, and promise us to effect 75 per cent of cure of such cases when we supply our patients with early diagnosis in the true sense of the word, which we are now well able to do, as soon as we can teach our lay public the necessity of immediate resort to us for such examinations.

The nature, symptoms, malignancy of all degrees and varieties of this disease are so well known to us, that according to the organ affected and its actual status we can make a very precise prognosis; we can determine to what degree a cure is possible and when and how adjuvant and palliative measures can be called upon to prolong life and always to relieve suffering.

Whereas surgery is constantly helping in the therapy of cancer, we are better and better informed of the cause of its failures and limitations, and learning these, are constantly improving and widening the limits and shunning the failures. Of recent steps of progress here the high-frequency knife promises an immense advance, and is already used by our leaders in surgery.

For alleviation of symptoms, we are medically well equipped and constantly and rapidly progressing.

We have adjuvant therapeutic means, sometimes for cure, and always of value as preparatory or post-operative agents of recent acquisition, the X-ray and radium, so we have no hesitation in declaring the lot of the cancer victim vastly better in each decade of our present day medicine. Today, in the ultra-microscopy and attractive theory of Gye, in the magnificent demonstrations of the possibilities of diagnosis, measure and control of filtrable virus, or ultra-microscopic life, that is now given us by the work of Levaditi in Herpes and its encephalitis lethargica, in vaccinia, in rabies, of Peterson and Levaditi in anterior poliomyelitis, in the determination of a filtrable virus state of the infection of tuberculosis and of all its portent in which Calmette is leading us, we feel that the door may open at any moment and reveal to us the causative agent of cancer.

The history of the medical sciences teaches us that at times there seems to be a kind of universal miasma floating in the air which thousands without concert breath at once, and the thoughts of mankind are directed along the same lines. This unaccountable unity of thought is the most remarkable thing in the history of man. This unity of thought and unity of action portends success. This unconcerted unity is now seeking solution of this burning question and their hands are reaching out from all sides, and soon some one will tear away the veil that covers this great mystery, and we may be astounded at the simplicity of the discovery: Why this uncontrolled cell proliferation.

For almost three-quarters of a century we have remained, as we still are in total ignorance of the causative agent of rabies; but this did not prevent the efforts and success of Pasteur who then undertook to develop and perfect its preventive and curative vaccination.

In similar manner, while still seeking the cause of cancer, our best efforts, at the great laboratories of microbiology and of therapy have been more and more intensively directed to the discovery of preventive and curative agents for the control of this disease even while we remain in total ignorance of its etiology. For this all of the resources and knowledge of our actual chemotherapy, vaccines, sera, antitoxins, antigens, bacteriophages, etc. All the known methods of microbiology have been tried and many new ones also devised; and all have failed, with the exception of the very new work of Deroux, Blair Bell and his col-

leagues with their intravenous colloidal lead therapy. In this line, due credit must be given to the French pioneer, E. Deroux (see "Les Cancers" published by Masson, Paris, in January, 1924; page 242) who since that date is following his exhaustive studies with the clinical use of "colloidal lead" in small closely seriated doses.

In this connection we may also recall the use of "colloidal gold" which seems to have been of benefit in many cases and apparent cures in some.

The subject of colloids as therapeutic agents brings up so much that is new and not yet perfectly understood, and embraces a field so wide—going far beyond my subject in its therapeuticol applications—that we cannot here give these methods the consideration that they deserve.

From the many case reports of its use by leading men, it would seem that colloidal gold is of distinct benefit in carcinoma; that it alleviates pain in a very marked degree, and rapidly shows reduction of the tumor, increases powers of resistance, and often reacts on the anemia existing there in astonishing manner; producing such changes in the blood state as this case cited for an example. Changing hemoglobin from 35 to 70 all in 11 weeks' time: (Red cells changing 2,250,000 to 5,430,000; white cells changing 8,000 to 13,500). For this therapy, a suspension of pure gold in colloidal state in pure water, at a dosage of one one-thousandth of a grain of aurium to every 10 minims of solution is recommended and such a standard solution is now on the market. This solution is first of all to be applied, when possible, directly to the surface of the growth (as any styptic would be used). The same solution is to be used internally, given by mouth, 10 drops in a wineglass of water, 1 hour before each meal, increasing the daily dose by 1 drop until the tolerance of the patient is reached. (Some patients are reported to take as high as 60 drops, three times a day.) Slight gastro-intestinal irritation, beefy tongue, heartburn, pharyngeal burning, colicky pains and tenesmus are symptoms of intolerance, and require limitations of the dose. When intolerance appears, drop the dose back ten drops and fix this dosage for continuance for months if needed. Where the neoplasm is inaccessible, from one to three intravenous administrations of the same solution—a volume of from 1 to 5 c.c. each —well sterilized, are given each week and are usually effected with little shock reaction. A striking feature in the case reports of the use of colloidal gold, which we have not sufficiently accentuated, is the very great and prompt diminution of pain in extensive and inoperable cancer; such as that of the lung, where for example we find that a patient long requiring ten heavy doses of morphine daily to make life endurable very soon after the first doses of colloidal gold, required only two hypodermic injections of morphine daily to keep her comfortable.

It is still maintained that other colloids than that of lead are equally efficacious and act in the same manner; in other words there is still effort to deny any specific value in colloid lead therapy on the cancer cells. As I have said before, the whole subject of colloids is far too extensive for my present study; but we may at least resume the reasoning of Blair Bell, his colleagues and apparently that of Deroux.

It is admitted that colloidal lead has a marked and specific action on the cells of the chorion. There is a well established similarity of characteristics and reactions of chronic and neoplasm cells when the latter are malignant. The query then is: will colloidal lead show the same specific and efficient action on cancer cell that it has on those of the chorion? Our experimenters—cited above—believe that they have established this similarity of action. There is no denying the surprising success of an important percentage of their cases treated thus rationally, but the *modus curandi* is discussed by others, maintaining there is no such cellular specific action here; but such disputants are unable to deny the results or to obtain them in any other way.

The efficient agent is colloidal suspension of lead, obtained electrically by Bredig's method, and used by Deroux in a dosage of only six-hundredths of one per cent (0.06 parts of lead in 100 of solution) but in much

larger doses by Blair Bell: one-half of one per cent (0.5 parts of lead in 100. of solution) but this stronger solution has a very great instability and must practically be made for each administration to the patient and at that place. On the contrary the weaker solution, that used by Deroux, is of proven stability for over one year (perhaps on account of its smaller dosage) and this solution then is a safe commercial possibility and can be made and supplied in standards by competent chemists, for the needs of all physicians desiring to use this therapy.

Deroux reports its use in some fifty cases of cancer, and with careful clinical and laboratory controls and studies. He has never met with any reaction of anemia, nor of intoxication; very rarely with any nausea or vomiting, and never encountered any renal or hepatic symptoms. After the first injections (intravenous always) there often appears in his cases, an increase in the number of the red cells, which however diminish later. Deroux uses this weak solution, in serial intravenous injections in small quantities for two months, during which time he has not given his patient any more of total lead than Blair Bell, with his first intravenous injection of 20 c.c. of the stronger solution gives at this first dose. Deroux claims no cures; but first the stability of his solution; second, lack of all danger; third, marked amelioration of the patient's condition. There is a general marked improvement; instead of being bedridden, the patients are able to be up and enjoy a certain degree of well-being—diminution of fetid secretions of uterine or rectal tumors is noticeable with a real relief for such states; the tumor itself diminishes in size, with a marked tendency towards retraction; there is a great diminution of pain; and biopsic examinations of the neoplasic tissue show a proliferation of the fibrous elements strangling the tubular epithelium.

With the stronger solution used by Blair Bell there are difficulties: First, the solution is so unstable; second, profound disturbances of the blood, the digestive tract, the kidney and the nervous system are induced by the use of this strength and amount of the colloid. Twenty-three per cent of patients so treated are reported, after a period of diminished urination to show albuminuria. Oedema and uremia are not rare, sometimes severe and in two cases have caused death. There are sometimes jaundice and the phenomena of anemia, with diminished cell numbers, diminished hemoglobin, and deformation of the globules is frequent. In some cases the symptoms of anemia have necessitated transfusion before the treatment could be continued. In all cases extreme care of the diet and of the kidney is necessary to ward off the menace of intolerance or intoxication by this medcation. Unquestionably the method of high dosage of Blair Bell carries danger and even death. With the method of Deroux we have safety, marked ameliorations but no cures; whereas Blair Bell brings us cures—20 per cent of them. A result that other than surgical, no therapy of cancer has ever before obtained; and this in the recognized surgically inoperable cases.

Of the 227 cases (Cunningham's statistics) of this therapy, 50 are reported as manifestly improved; in 10 the disease was completely arrested and of the 50 above cases 31 are considered as cured and were not further treated. Of this series of 227, 50 died before completion of the erial injections, and 106 after the completion of the injections, which determines a per cent of cures as before stated of 20 per cent. Among these some of the case reports read like miracles. For instance, a woman 36 years old, with inoperable, adherent cancer of the breast, with axillary involvement of the ganglia. Diagnosis confirmed by biopsy as carcinoma, colloidal lead to a total dose of 0.32 grams produced a cure that has persisted for five years, with subsequent biopsy report of "only connective tissue" and during which period she has given birth to and nursed two children.

Twenty per cent of cures in cancer cases, reported by undoubted authority requires our immediate and exhaustive attention and

follow up, and makes our heats beat high at this promise for the future.

The appreciation of the late Professor Adami, the author of the text book of pathology of our young generation, the director of the institute under whose direct supervision this work was done, has been expressed in terms of unstinted praise, and has been published in our medical journal (*W. Va. Med. Jour.* vol. xxii; No. 11, page 607; Nov. 1926).

We have previously declared the very high degree of precision and competence of our clinical knowledge and laboratory aids for exact diagnosis of cancer; and we maintain this truth in spite of the equally exact fact that an unduly high percentage of error or failure in making cancer diagnoses still exists as is shown by analyses of the necropsy records of large hospitals. Cook County Hospital, of 545 case reports that of these neoplasms only 367 were recognized during life—32.7 per cent—therefore, of this disease terminated fatally without its diagnosis. In addition to the 267 above there were 33 cases so diagnosed in which no confirmation was possible at the necropsy. The diagnostic error shown by these records amounts to 36.5 per cent. Different large units in other countries show like error. London hospitals, 28.2 per cent of diagnostic error; Berlin, 22 per cent in 711 cases and in addition 58 cases so diagnosed but not found at necropsy; total error then of 27.5 per cent. Budapest reports that 21 per cent of all cancers found at necropsy were undiagnosed in life: of gastric cancer 22.4 per cent were missed; of liver and pancreas 38.6 per cent overlooked; also 47 per cent of intestinal cancer in women, and 10 per cent of uterine cancer. Lemberg in Poland reports of 831 cases at necropsy—between 1904 and 1920—31.1 per cent were undiagnosed in life; Iena statistics—the most complete we have as it comprises 42 per cent of the population of the entire community—for 800 case reports cancer diagnoses for 94.28 per cent and 80 per cent correctly located.

These figures are quite sufficient to bring out another very important point.

Our present ability and means in hand, for early and correct diagnosis of cancer is very great, and has enormously increased our power to diagnose this disease. As more and more physicians acquire such ability and resort to all means available (particularly expert laboratory search and advice) the number of cancers diagnosed and thus reported will correspondingly increase as also the actual number of deaths therefrom; and to this extent explain the increasing number reported for cancer mortality, while the cancer incidence might be quite stationary or even diminishing.

In closing, I wish to cite brief, actual facts; to resume a very serious situation; which we can absolutely control by united effort.

As an agent of death cancer is rapidly nearing the lead of numbers.

Of all adults now alive, one in every 10 is marked for a victim of cancer.

Of all of us now over 45 years of age, one of every five is marked for cancer as long as present conditions prevail. But we can promptly change these. The power is ours—let us have the will to do.

Action is imperative now.

We have all that is needed for early and accurate diagnosis of cancer. Present therapy promises the salvation of 75 per cent of those who may now have early diagnosis of cancer.

To accomplish this change of actual conditions, only two things are needed: to teach our patients to come to us quickly, and ourselves to be competent, conscientious, thorough and ready to do our duty, make early and exact diagnosis, execute the therapy we now control, and save our patients.

The object of my paper is to make this plea with all the power at my command. Let us all march forward in this crusade, not seeking to redeem a Holy Sepulchre, but go forth to rob the tomb of Death's holocaust of cancer, and hear the glad acclaim "Well done thou good and faithful servant."

SOME OBSERVATIONS ON INTRACAPSULAR CATARACT *

By C. M. HAWES, M. D.
Huntington, W. Va.

THE following observations are based on more than a hundred intracapsular cataract extractions done in the past three years by my partners, Dr. F. O. Marple, Dr. Wesley C. Thomas and myself.

I shall make no claims at originality as the Smith technique has been pretty closely adhered to in all cases. I refer to that master surgeon, Lt. Col. Henry Smith, now of London, England, but formerly of Amritsar, India. Perhaps a little history is not amiss here since Smith is mentioned.

At the time of Dr. Smith's first visit to America some twenty-odd years ao, no American surgeons were doing intracapsular extractions, though to Dr. J. W. Wright of Columbus, Ohio, belongs the credit for being the first to advocate and practice this method in 1884. No enthusiasm was awakened to Wright's method and only too well do I remember when Smith appeared in New York on his first visit and was giving demonstrations of his method. I was a house surgeon in the Brooklyn Eye and Ear Hospital and like most of that ilk, got my opinions from my superiors who seemed to be mighty men, and I imitated their technique and mannerisms, and echoed their opinions. Naturally one as low down in the professional scale as I did not see Smith operate but I heard many tales and listened to much ribald laughter and adverse criticism. According to the stories I heard the man was a joke and too eccentric for words. Why! he smoked in the operating room almost continually, poked lenses right out of eyes without doing a capsulotomy, but had a very remarkable Hindoo assistant whom his most severe critics admitted was a marvel. I want you to note this for I shall mention forcibly the assistant's part of the operation later.

Twenty years afterward I was fortunate enough to meet Dr. Smith personally and see him do a number of cataract extractions. He did forty-two in five hours one day, in Columbus, Ohio, and his tour through the country was marked by a great turning out and much doing of homage to this great master. As I watched his marvelous work I could but wonder if he was thinking of his first reception. He must have done so, for he remarked, a long stogie in his face at the time, on how he had been formerly criticised for smoking in the operating room and made the naive statement that if anyone could think of something more sterile than cigar ashes, please to mention it. No one spoke up.

The intracapsular method offers so many advantages over the old method that it is a waste of time to cite them; but two are most worthy of notice.

First - The long interval of waiting to go blind that comes between the time when the cataract is dense enough to prevent the daily preformance of normal duties but not "ripe" enough for surgery. The Psychology of this is bad for the ever haunting fear of blindness and the time of being lead around works havoc with the patient's morale; while to tell them that anytime after their vision becomes so defective as to inconvenience, it can and will be relieved, and that no period of almost total blindness need be suffered, gives hope and entirely different view point.

Second - In operations with capsulotomy, no matter how skillfully done, it is the rule rather than the exception, to have some part of the lens substance or some capsule remain and the remnants act as foreign bodies, much reaction following. The iritis which follow cataract extraction is solely due to remnants of capsule or lens substance and to have iritis following intracapsular extraction is indeed rare.

* Presented on June 22, 1927, to The West Virginia State Medical Association, at White Sulphur Springs.

Before such an assemblage as this all symptomatology and etiology can be omitted cosmetic effect is not quite so good.

The ordinary speculum is used in the first stage of operation while the incision is being made. This incision must be at least 180 degrees, no less will do. Personally I prefer conjunctival flap if possible, also iridectomy following incision because I believe it the safest method even though the comestic effect is not quite so good.

Immediately after iridectomy the speculum is removed, care being taken to make as little pressure on eye as possible. Very carefully a retractor is inserted under the upper lid, we use a Behren's, but there are several good ones, and the lower lid is held down on the cheek bone by assistants thumb with flat pledget of moist cotton under ball of thumb to prevent slipping. You remember I mentioned Smith's Hindoo assistant; I know why he was along; the good doctor was not willing to trust anyone he did not know, for about four-fifths of the operation's success depends on a highly skilled assistant and without which failure is absolutely assured. The upper lid must be held up and away from the eye ball, the lower lid down and away, and the free finger not holding retractor must have a good grip on the forehead. The least touching of lids to eyeball and the hazards are greatly increased. Serious loss of vitreous is not going to come from pressure of extra ocular muscles but from the orbicularis.

We have never used novocain to paralyse the orbicularis and frankly I am afraid to, for if too much paralysis is obtained then the lids will tend to stay open after the bandage is applied and I want them to hold and hold tightly.

Having the eye before us with ample incision and lids free, place spoon very gently at upper side of wound but make no pressure whatsoever. With a tenotomy hook or another spoon make firm pressure directly backward at lowest part of lower quadrant of eye. At six o'clock the pressure must be straight back as tho pushing at the optic nerve and must be constant once started. As the lens move the line of pressure changes so as to be at right angles to surface of lens, that is first backward, then backward and upward and follow thru with the lens as it progresses. It is almost imperative that the firm pressure be not relaxed if possible.

It has not been our experience that the lens "tumbles" as described by Smith but usually the zonule seems to rupture in the upper quadrant and the lens tilts far foreward as it comes out. Once the lens is out, instantly and very gently free the iris from lips of wound and close lids immediately. **Do not under any circumstances go** back and take a second look to see what a nice operation you have done. If you do your orbicularis will get in its work and you will much more than likely be greeted with a flood of vitreous. Let me stress this point, that once having completed this operation there is no excuse for taking a second look, and there is much danger.

A small loss of vitreous, in fact quite a bit can be sustained without any harm following if after the case is handled correctly. We were all taught that the vitreous was a fixed humor and did not replace itself. I heartily agree with Dr. Smith that that statement is an error handed down from one text book to another without being borne out by the facts in the case. The vitreous does replace itself and in very considerable quantities as I have good reasons to know.

Atropine should be instilled into eye several times early in the day of operation and once the bandages are snugly in place the eye should not be dressed from six to nine days. If it be advisable,and it frequently is, to remove bandages from the other eye in four or five days, do not open or examine the eye upon which operation has been performed. There is no place in surgery where frequent dressing is more fraught with evil consequences than in cataract cases. There is absolutely nothing to be gained by dressing if everything is progressing favorably. These cases do not have post-operative iritis and if there should be infection the eye is already lost and the pain will be so severe as to warn the operator who can then remove dressing and learn the worst.

Senile dementia has in our hands proven one of the worst complications to be met with. These old people seem to do better if a relative or close friend is with them constantly for a few days. Some of them do get fearfully nervous and then the touch of a familiar hand and the sound of a well known voice aids greatly in quieting them.

Uncovering the other eye is the sheet anchor in senile dementia, which reminds me that we had one double cataract do a high dive from his bed to the floor about the third day after operation, landing on his head, Truth compels me to say it did not do his eye sight any material good though it did have a very salutary effect on Dr. Marple and cured him of ever doing any more double cataracts. One at a time, and free the other eye if they get wild, for him from now on.

At least twenty percent of our cases have lost a little viteous without any harm following. One, a most unruly woman, had hysterical vomiting, burst wound which became infected an had an eneucleation. One double cataract raised bandage on fourth day to take a look around; both wounds gaped badly and had bulging vitreous. A tight bandage for five days relieved entirely. Three cases had Glaucomia and had preliminary Elliott's trephine operation four weeks before extraction. Good results follow tho vision was already badly impaired by Glaucoma. One case was in an 84 year old patient with only one eye and chronic bronchitis was kept in sitting posture thru entire convalesence with excellent results. Several had chronic trachoma, but not active, and it seemed to make no difference. One had marked Diabeties. Sugar was reduced with diet and Insulin until urine sugar free. Insulin was continued after meals for three weeks following operation, and till result was perfect.

In conclusion - Our observation have led us to believe that the intracapsular method is not attended by any more risks than the old method if the operator has an expert assistant. That the absence of iritis following operation more than overcomes any extra risk, if present; and that the loss of vitreous is not anywhere near the calamity that it is popularly supposed to be.

WHOSE BUSINESS IS IT*

By W. E. WHITESIDE, M. D.
Parsons, W. Va.

ALTHOUGH my own observation does not cover many years, and personal failures have taught me how easily one may err in his conclusions, yet there has been in the past fifteen years a change taking place in the relationship of the physician to matters of public health and in the personal attitude of the public toward the physician, which I think must either change soon, or it bodes evil both for the public and for the medical profession at large, even to the point of reducing the art of healing to legislative enactment rather than a noble calling, based upon cold scientific facts, plus many years of experience.

Sometimes it seems that, the wonderful achievements of modern surgery and medical specialty have robbed the general practitioner not only of his source of income, but also of his good name.

Time is too short to quarrel with one because of this condition, but to get my subject squarely before you the question I wish to ask is simply this: has the internal medicine man any right in this modern age to call himself a DOCTOR OF MEDECINE, or has he outlived his usefulness and should his place now be filled by our county and city board of health, and by our boy scouts, public school teachers; and county nurses?

The teachers in our public schools today presume to diagnose and treat goiter and perhaps some other diseases, and I have seen a boy scout of twelve years of age, feel himself quite competent to treat a serious injury to his fellow playmate. Since

* Read before the Barbour-Randolph-Tucker County Medical Society, at Parsons, W. Va., July 28, 1927.

when did the diagnosis and treatment of so serious a disease become so simple?

It is not uncommon for a young girl of fourteen summers to walk nonchalantly into your office, declare herself to have goiter, and to demand iodine tablets for self-treatment.

In a recent issue of the journal of A. M. A. is an article telling the difficulty in diagnosing between certain types of goiter and tuberculosis. I have seen a young girl losing flesh, nervous and irritable, improve much by simply advising her to cease taking iodine tablets administered at school. Who is to blame for this state of affairs? Have we, in our attempt to educate the public, taught them aright, or have we miseducated them? If medicine be so simple, why spend four years in a medical college? If our school teachers are to practice internal medicine, why not let our barbers practice surgery?Have we, by our acquiescence, or indifference, lent our indorsement to this state of affairs? If the laity are led to believe that goiter is so simple to diagnose and so easy of treatment, is it any wonder that the whole art of medicine appears so simple that the layman no longer honors the physician as a learned man, or is it strange that our legislators deem themselves fully competent to tell the physician what and how much he may prescribe of a given remedy, and to have such an absurd position sustained by the Supreme Court of the United States. Where will this thing eventually lead? Shall we lie supinely on our backs and see this continue from year to year, or in the language of Hamlet's soliloquy, "Shall we take arms against a sea of troubles and by opposing end them".

Perhaps in our zeal to tear the cloak of secrecy from medicine, we have also robbed it of much of its dignity. Sometimes a pink tablet of lactose or sodium bicarbonate works wonders if given with the proper asurance that it will surely relieve. Perhaps even the charlatan might teach us a few lessons.

No doubt there are some things which we should try to teach the public, but in our zeal to do so let us not further destroy, but rather let us strive to restore, the ancient faith our fathers had in the good old family doctor. Destroy completely the faith which the public have in their family physician, and every great medical institution will eventually feel a substantial loss of prestige.

Let us then say to the laity and to the legislators also in terms too plain to be misunderstood that the cumulative wisdom of ages declares that medical matters are best left in the hands of medical men.

LATEST TEAR DUCT OPERATION *

By A. L. COYLE, M. D.
Wheeling, W. Va.

THERE is probably no operation in surgery that gives as poor results as the tear duct operation, especially when the sac is infected. A few years ago I was enthusiastic over the Mosher operation, but when given time to check up on the end results, they all recurred, some were over a year getting to it, but they finally footed up 100% relapses. A plastic surgeon could have predicted such results, as it and all other procedures were against the fundamental principles of plastic surgery, which demands that a cavity must be lined as well as covered. Accepting this axiom of the plastic surgeon, a French surgeon named Du Fuy du Temps, devised an operation that lines as well as covers the canal from end from end. The technique is extremely simple to watch. I have never attemped it, so can not state as to the ease with which it can be done, though it looks easier than a nasal submucous resection. The incision is made as in any similar operation, care being used to avoid the sac. The cut is made to the bone the periostium stripped back, the lachrymal bone and enough of the nasal bone are chisel-

* Read by title before The West Virginia State Medical Association, at White Sulphur Springs, on June 22, 1927.

ed away to expose a square or rectangular section of the nasal membrane. This is cut into two flaps, lower and upper, then the sac is cut into two corresponding flaps, the upper flap of the sac sutured to the the upper flap of the nasal membrane, the lower flaps sutured, the wound closed with cat gut, a collodion dressing applied, no bandage, the patient sent home and told to remove the cotton in four days, aud if there is any pus to return, if not to pay no attention to it. I watched this on an average of four times daily for one month and never saw one return. I am of course speaking of charity cases, and with local anesthesia, cocaine on the nasal membrane under the anterior end of the middle turbinate, novocain injections externally, reaching to the bone. I am of the opinion this is one of the big advances in recent years in opthalmic surgery. The inventor claims it very difficult on the cadaver, as the nasal membrane adheres more tightly, but should be practiced that way, and if done successfully it will be easy on the lining. It requires special instruments for surturing, and one should have a special chisel for the bone. Any bone cutting forcep will do, and a mastoid hammer. This operation is so well recognized in Europe that the doctor receives patients in his private practice from all countries, sent by the leading opthalmologists, and some even from America, though I have never seen a description of the operation in an American journal.

ABSTRACTS

Acute Pancreatitis

By BAILEY

British Medical Journal No. 3431, 1927

Author makes the following points in differential diagnosis:

The patients are usually obese and have either had similar attacks of pain previously or show a tendency to gall bladder symptoms. Due to the resorption of the protein bodies digested by the pancreatic juice, a typical cyanosis is remarkable which is present primarily in the face. The pains radiate typically from the epigastrium to the back and the absence of contraction of the abdominal musculature is typical due to the absence of diffuse peritonitis. Loewi's adrenalin mydriasis is very important (widening of the pupils following four drops of adrenalin in the conjunctival sac; repeat in five minutes and observe in 30 minutes.) This reaction is positive only if the automatic nervous system is affected; of any abdominal affections pancreatitis would thus be the only one to cause the reaction because of irritation of the solar plexus. But a negative reaction does not exlude pancreatitis. Glycosuria is in constant and a palpable tumor or Turner's sign (discoloration of the lumbar region due to the effect of the pancreatic juice escaped from the retroperitoneum) are both late symptoms. Operation is the sole therapy and at this time the gall bladder should also be looked over (cholecystectomy, choecystostomy, choledochus drainage). A marked adynaima often appears about a week later for which one must transfuse blood.

R. K. B.

Pulmonary Tuberculosis

A practical consideration of time as one of the important factors in the successful treatment and satisfactory recovery from Tuberculosis.

Sam E. Thompson, M. D. (Texas State Journal, August, 1927) calls attention most graphically by quoting from letters and statements showing how grossly patients are misinformed as to the length of time required for the arrest or cure of pulmonary tuberculosis, calling attention to the established fact that pulmonary tuberculosis is usually well advanced before a diagnosis is made and that 66 2-3 per cent of all patients from..... Sanatorium showing positive sputum died within five years after discharge. That complete fibrosis and calcification are slow, complete absorption slower. No patient being safe until these processes are thoroughly es-

tablished. He follows the classification of the National Tuberculosis Association and states that to become QUIESCENT in favorable cases requires two to four months, the patient is still sick, having just arrived at the beginning of going forward. APPARENTLY ARRESTED—six to twelve months remembering that the physical signs must be those of a healed lesion and that this is the danger period. Being without symptoms the doctor is often too lenient and the patient too sure of recovery. He is still on probation and should make all new moves with caution. ARRESTED—patient to have been apparently well for six months, physical signs of a healed lesion, has been under treatment a minimum of nine months, and should report for examination every three months. If intelligent and willing to do the right thing may now return to his vocation.

APPARENTLY CURED—when the patient has been in effect well and has followed his vocation for two years under the ordinary conditions of life. It is more rational to lean to the rather extreme view of the Saranac Lake man, that four to six years is necessary to heal a patient suffering from advanced pulmonary tuberculosis, than the disastrous advice that three to four months treatment will control and heal the disease. Prolonged sanatorium treatment is neither necessary nor desirable. Patients after a reasonable stay should return home and complete their cure. Death is inevitable in all cases showing definite ulceration or cavitation if they are told that a brief time is necessary for the cure and they act accordingly.

The prognosis over all in pulmonary tuberculosis always has been, and is bad today and will be worse if patients aren't made to understand that the process of repair is slow and that two to six years must pass before the disease is completely and permanently cured. This to include all phases of the cure including the probation period referred to.

—G.H.B.

Hospitals Are Flayed

Before us in the Atlantic Monthly for October, and on the top front cover is this caption, "Our Secret Anxiety." That denotes that in the staid arbiter of what is very ultra intellectually, this is the leading article. Well, what is "Our Secret Anxiety?" Evidently "the cost of illness," according to Anne Miller Downes, its author.

Every doctor in the state of West Virginia who has access to this article should read it. Mixed in with what would pass to us as exaggeration is some very painful but none-theless illuminating and truthful observations. Among the latter is this statement: "The great middle class is not rich enough to buy the best service and not poor enough to accept charity."

We have all come to see the justice in part of this. Many think a small room at three or four dollars, arranged in groups of four to six and presided over by one student nurse, might help to solve the problem for the middle class in hospitals.

The incident of the professor and his tonsils and the young lady with appendicitis look a bit over drawn to us. In any event it is not usual here to charge such prices. But we realize in writing articles such as this, the author has to be somewhat dramatic. Miss Downes has not written anything new. The American Magazine had all this in some years ago. Perhaps it may do a lot of good to say it all over again, especially since on page 572 we find she was "fortunate in having the advice and guidance of several eminent doctors." Then again, "that the subject cries for attention may be judged from the action of a recent Washington conference in organizing a committee of physicians, economists and sanitarians to undertake a five-

year study of conditions. Meantime we struggle to pay our bills."

You will never find the Atlantic Monthly working overtime on behalf of the medical profession. Whether it has a couple of Christian Scientists on its staff we do not know, but we would merely guess it has. In any event it has had its share of articles analyzing our discrepancies. As far as we are concerned we believe these so-called exposures are a good thing and we sincerely welcome them. But we will never be satisfied until we see what fees some of these magazine writers receive for writing such articles as this and if they are (or are not) also overcharges in many instances.

—H.M.H.

Membership

Our membership for 1927, up to this time, has exceeded that of all previous years, and it should by all means continue to increase. We are continually receiving complimentary expressions on the improvements in our Journal, of all its features.

We have for the remainder of the year many scientific papers of high class by our own members, and other physicians outside the state, of national reputation. Our abstract department is becoming popular, and the members who have been requested to write abstracts have responded promptly, and have furnished us with the prime idea of the experience and opinion of authors and research workers. Our advertising space is all taken, and will probably have to be increased in the near future.

The fall season is here, we have had our vacations, and should all be ready to enter enthusiastically into the activities of our county societies. Try to get some new man who has been negligent or unconcerned, to join our ranks, and let us help him while he is helping us. We will be more than glad to furnish a copy of the Journal to any nonmember whom you may suggest by letter or postal card.

The West Virginia Medical Journal is your organ of publicity, and one source of information. The greater our membership and subscribers, the better our chances to enlarge and improve. We earnestly solicit every member to become a missionary for new members for the remainder of 1927.

—C.A.R.

Hospital Records

The importance of accurate and complete histories and records of patients which is constantly stressed at hospital meetings, recently was brought home in a most vivid way to the superintendent of a small hospital who was asked to take the witness stand in a suit involving a staff doctor. The suit was highly important to the physician, and apparently called for trial unexpectedly, since the physician did not notify the superintendent until late the night preceding the session that she would be expected to attend, and bring the hospital records.

In telling of her experience the superintendent emphasized the fact that she might not have made a very favorable witness had not the record been complete and accurate, and all the details set forth in a most commendable way.

"I never realized before how important it was to have a good patient's record," remarked the superintendent to a group of friends in relating her experience a short time ago. "And I certainly know that anyone connected with a hospital, a trustee, executive, staff member, or other person certainly will become a proponent of accurate and complete records if he ever has occasion to have to depend upon them in giving testimony in court, especially under cross examination. A court is the best place in the world in which to get a real appreciation of good hospital records."

The earnestness with which this statement was made spoke volumes for the seriousness of the speaker in endeavoring to impress upon her friends the vital importance accurate and complete records were in this instance.

Executives who find individuals opposed to keeping records up to date and in a satisfactory condition might relate this incident to these persons, and suggest their considering records in this light.—*Hospital Management.*

THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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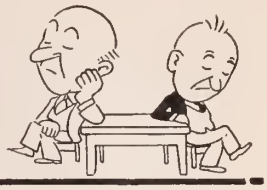
NEWS NOTES OF COMPONENT SOCIETIES



Mercer County Meets

The regular monthly meeting of the Mercer County Medical Society was held at the Municipal building at Bluefield at 8:30 o'clock on the evening of September 28. There were no clinical cases reported and Dr. R. R. Stuart of Bluefield, opened the program with a paper on "Acute Poliomyelitis," in which the subject in all of its phases was thoroughly covered.

Dr. Stuart was followed by Dr. A. E. Amick of Bluefield, who gave the society the pathology of "Acute Poliomyelitis," along with his personal experiences with a number of autopsies he made during post graduate work in New York City. Those who took part in discussing the two papers were Dr: D. B. Lepper of Bluefield, Dr. W. E. Dickerson of Princeton, Dr. J. E. Morrison of the E. R. Squibb Company, Dr. E. W. Horton of Bluefield and Mr. Charles Stevens of Baltimore of the Parke-Davis Company.

Following the program of two papers, Dr. Stevens demonstrated through moving pictures a film "How Biological Products Are Made." The film took up the preparation of both antitoxins and vacancies and was considered a splendid part of the evening's entertainment.

It was announced by the secretary that the program for the next meeting of the Mercer Society would be put on by the McDowell County Medical Society. The secretary was instructed to make arrangements for a banquet at the West Virginian Hotel at Bluefield for the evening of October 19, when the meeting will be held.

H. G. STEELE, *Secretary.*

Marion County

The Marion County Medical Society opened its regular fall program on the evening of Tuesday, September 27, at the Fairmont Y. M. C. A. The meeting followed a dinner served to the members of the society and 28 doctors were in attendance.

Dr. R. C. Hood of Clarksburg, read a splendid paper to the society on Infantile Paralysis. There were no other papers on the program and the remaining time was turned over to discussion, in which nearly all of the members present took part. Dr. Hood was congratulated upon his paper by Dr. L. N. Yost, president of the Marion County Society, who presided at the meeting.

Preliminary plans for the state convention to be held in Fairmont in May, 1928, were made and are reported elsewhere in this issue. Committees were appointed by the president to take charge of the convention arrangements.

Central West Virginia

Dr. M. T. Morrison of Sutton, Braxton County, was elected president of the Central West Virginia Medical Society to succeed Dr. C. Fred Fisher of Richwood, at a meeting of the society held in the reception hall of the Buckhannon Rotary Club on October 12. Dr. S. P. Allen of Webster Springs, was elected as vice-president and Dr. S. S. Hall of Buckhannon, was re-elected as secretary and treasurer.

The Buckhannon meeting, which was the final quarterly session for 1927, got under way with a banquet at 7 o'clock for the doctors and their wives. Following the banquet the ladies retired to another room where plans were perfected for the Woman's Auxiliary of the Central West Virginia organization.

The scientific program consisted of a paper on "X-ray Therapy of Skin Diseases," by Dr. Howard Phillips of Wheeling; "Puerperal Eclampsia," by Dr. Ralph Maxwell of Morgantown; and "Treatment of Fractures in and About the Ankle Joint," by Dr. C. Fred

Fisher of Richwood. Dr. D. G. Caudy of Tioga read a paper prepared by Dr. T. R. O'Rourke of Richwood on "Complete Optic Atrophy Following Typhoid Fever."

Following the scientific program, Dr. J. A. Rusmisell of Buckhannon took up and discussed "Machinations of Miners' Hospitals, Their Uses and Abuses." A free discussion was entered into by all the members present on Dr. Rusmisell's report.

Delegates to the state convention at Fairmont next year were elected at the October 12 meeting as follows: Dr. M. T. Morrison of Sutton, Dr. J. A. Rusmisell of Buckhannon, and Dr. S. S. Hall of Buckhannon. Alternates were Dr. T. R. O'Rourke of Richwood and Dr. L. H. Triplett of Buckhannon.

Kanawha County

The first fall meeting of the Kanawha County Medical Society was held in the assembly room of the Kanawha hotel at 8:30 o'clock October 11, with approximately 35 Kanawha county physicians and surgeons in attendance. The meeting was featured by a symposium on infantile paralysis and was followed by a buffet luncheon. A number of out-of-town doctors were in attendance.

The symposium was presented by Dr. J. Ross Hunter, Dr. W. S. Shepherd, Dr. E. B. Henson and Dr. David Littlejohn, all of Charleston. Dr. Littlejohn, who is connected with the state health department, devoted the greater part of his time to the prevention of infantile paralysis and traced the spread of the disease throughout West Virginia.

In opening the symposium, Dr. Hunter took up the difficulty of diagnosis and then spoke briefly on the care of the patient. Dr. Shepherd took up the disease in regard to its action on the nervous system and described the various forms of paralysis. Dr. Henson spoke upon the new methods of treating the disease.

Barbour-Randolph-Tucker

A symposium on poliomyelitis featured the September 23rd meeting of the Barbour-Randolph-Tucker Medical Society held at the Hotel Tygart in Elkins with 16 members in attendance. The meeting was preceded by a supper served in the hotel.

The symposium was opened by Dr. T. P. Haslem, bacteriologist and pathologist at the Davis Memorial Hospital in Elkins, who gave the etiology and pathology of the disease. He also gave a minute history of the investigations and experiments being made to learn the nature of poliomyelitis. He brought out that the nose and tonsils were now conceded to be the source of infection.

Dr. S. G. Moore of Elkins gave a very vivid description of the symptoms of a typical case; sudden attack, nausea, fever, hypersensitiveness, pain, and paralysis of muscles or groups of muscles. He pointed out that the symptoms varied greatly, frequently the only positive diagnostic symptom being the paralysis.

Dr. O. L. Perry of Elkins discussed the prophylaxis, quoting largely from the national health bulletin for his authority. He said that there is as yet no known means of positive immunization, though some claim that serums are a promising feature, not as yet adopted. Spraying the nares and throat is advocated but even that, he said, is questionable.

Dr. C. H. Hall of Elkins, discussed the medical treatment. He stated that so far he had discovered no medical treatment that was of much service, and that the only thing a physician could do was to treat the symptoms as they arise.

The surgical treatment of poliomyelitis was handled by Dr. B. I. Golden of Elkins. Dr. Golden said there were three things to bear in mind: first, oedema, causing nerve pressure; second, toxemia, causing poisoning of the system by cell decomposition, and third, physiological impairment.

Following the symposium, the undecided query was as to why, in the earlier sporadic cases of years ago, when it was not known what the patients had, when no preventative measures were used, and when no isolation was thought of, yet there was no contamination or spread of the disease.

The meeting adjourned after a profitable evening to meet again in Elkins in November.—J. C. IRONS, *Secretary.*

GENERAL · NEWS

Next Year's Convention

Preliminary plans for the sixty-first annual convention of the West Virginia State Medical Association to be held at Fairmont next spring were made at a meeting of the Marion County Medical Society at Fairmont on Tuesday evening, September 27. The meeting followed a dinner served in the Fairmont Y. M. C. A. and 28 members of the society were in attendance.

Although no definite date has as yet been set for the 1928 meeting, it was generally understood that it would be held on May 22, 23 and 24. The final decision will be made by the Marion County Society in the near future. Joe W. Savage, executive secretary of the state association, was present at the Fairmont meeting and took part in the preliminary arrangements.

Coming on the heels of the Fairmont meeting, the committee on scientific work of the state association, headed by Dr. R. U. Drinkard of Wheeling, met at the Prichard Hotel in Huntington on Thursday, September 29, to begin the long task of preparing the scientific program for the 1928 convention. Dr. Drinkard presided at this session and those present were Dr. A. H. Hoge of Bluefield, Dr. O. B. Biern of Huntington, Dr. C. A. Ray, president-elect of the state association, Dr. John E. Cannaday of Charleston and Joe W. Savage, secretary.

At the Huntington meeting, it was the concensus of opinion that the past convention programs had been too long and steps were taken to cut down the 1928 program so that all of the doctors in attendance could hear all of the papers without tiring. It was also thought wise to limit the state men to the sectional programs and to discussion. No doctor who had a place on the 1927 program at White Sulphur Springs will be allowed to appear at Fairmont in 1928, it was stated.

A number of nationally known physicians and surgeons were decided upon for the program at Huntington but it was thought best to withhold their names from publication until they accepted an invitation to appear. It was generally agreed that Dr. Morris Fishbien, editor of the *Journal of the American Medical Association,* would be asked to be the speaker at the convention banquet.

Practically all of the plans for the actual meeting are now in the hands of Dr. E. W. Howard and Dr. J. A. Reidy of the Marion County Society, who comprise the committee on arrangements appointed by their president, Dr. L. N. Yost of Fairmont. Other committees appointed by Dr. Yost were: Finance—Dr. C. W. Waddell and Dr. George Traugh; entertainment, Dr. J. A. Clinton and Dr. C. W. Ramage; hotels, Dr. C. O. Henry and Dr. J. J. Jenkins. Dr. Carl J. Carter of Fairmont will act as secretary to each of the convention committees.

Convention headquarters next spring will probably be established at the Fairmont Hotel and all of the sessions and commercial exhibits will probably be in the new Armory building recently completed. It was said that every effort would be made to house the entire convention in one building. The 1928 gathering at Fairmont will perhaps be designated as the "Founder's Meeting."

The doctors of Marion county are very enthusiastic over the prospects for next year's convention and expect to make it the biggest and best that the association has ever held. The committee on scientific work has already started to secure out-of-state speakers and will probably have a report next month.

Publication Committee

A meeting of the publication board of the *West Virginia Medical Journal* was held in Huntington on the morning of Thursday, September 27, in the Hotel Prichard. Mem-

bers in attendance were Dr. C. A. Ray of Charleston, editor of the journal, Dr. Walter E. Vest and Dr. James R. Bloss of Huntington, and Dr. Harry M. Hall of Wheeling.

A number of important matters in connection with the journal were discussed and plans were outlined for the journal program in 1928. Dr. Bloss will take the helm of the state publication on January 1, 1928, when Dr. Ray becomes president of the West Virginia State Medical Association.

New Tri-State Officers

Dr. J. M. Salmond of Ashland, Ky., was elected president of the Central Tri-State Medical Society to succeed Dr. Charles E. Holzer of Gallipolis, O., at the recent meeting of the organization held in Huntington, W. Va. Dr. Salmon was formerly a vice president of the Tri-State society.

Vice presidents selected at the recent meeting were Dr. E. McElfresh of Point Pleasant and Dr. H. F. Rapp of Portsmouth, O. Dr. F. O. Marple of Huntington was re-elected as secretary of the society. To fill the vacancy caused by the death of Dr. Lusher several months ago, Dr. H. A. Barbee of Point Pleasant was elected a member of the governing council.

George A. MacQueen

Dr. George A. MacQueen, former president of the West Virginia State Medical Association, former mayor of Charleston, W. Va., and one time candidate for governor, died at the home of his parents near Charleston on the morning of October 17. He was born in Nicholas county in 1879 and was 48 years of age.

Dr. MacQueen was one of the most picturesque figures in the state association. After practicing his profession for some time in Braxton county, he removed to Charleston where he purchased the present Kanawha Valley Hospital. He was elected mayor of Charleston in 1917 but resigned a short time later to enter the army during the World war. He returned and in 1924 was a candidate for governor on the Democratic ticket. Later he disposed of his interests in the capitol city and removed to Keyser, W. Va., where he was in charge of the Hoffman Hospital. He returned to Charleston a short time ago because of ill health and died rather suddenly on October 17.

Dr. MacQueen stood in high regard as a surgeon and served at different times as president of both the Kanawha Medical Society and the West Virginia State Medical Association. He was well known throughout this state and his death was a sad blow to his thousands of friends and admirers.

Oscar Burnham Beer

Dr. Oscar B. Beer, for many years one of the leading citizens of Buckhannon and a former mayor of the city, died at 6 o'clock October 13, at Coral Gables, Fla., as the result of heart trouble from which he had been suffering for several months.

Dr. Beer left Buckhannon about two years ago for Florida, where he engaged in his practice as long as his health permitted and where he took an active part in the business and civic affairs of the southern city. He was a member of the chamber of commerce at Coral Gables.

Born at Queens, Upshur county, March 27, 1870, Dr. Beer was a son of G. W. and Mary M. Taylor Beer, members of a pioneer family. He was educated in the public school in Upshur county, and then he decided to take up the study of medicine. He attended the University Medical School at Lebanon, O., the Maryland Medical College, at Baltimore, the Chicago Eye, Ear, Nose and Throat school, the School of Electro Therapeutics, at Chicago; and the New York Post Graduate School and Hospital. He also frequently attended the famous Mayo Bros. Clinic, at Rochester, Minn. Dr. Beer started practicing at Hampton ,Upshur county, among the people he had been reared with and whom he knew so well. That was in 1898, and five years later, or in 1903, he moved to Buckhannon.

Dr. Beer was a member of the West Virginia State Medical Association. The news of his death was a sad blow to his many friends throughout the state.

COMMUNICATIONS

A Probable Cause of Acute Anterior Poliomyelitis

The writer of this article is convinced that birds, especially the migrating birds, are the chief carriers of the infection causing acute infantile paralysis.

I am giving my experience with the hope that if any other physician has made a similar observation he will let it be known and something definite might be established as to the source of this infection.

During the fall months of 1916 when we were having our previous epidemic of infantile paralysis we had a large bird house on the rear of our garage. There were a number of species of black birds roosting in this bird house at night. We also had chicken pens in the rear of the garage in which we kept twenty or more chickens. One morning we found a paralyzed bird fluttering around among the chickens and in the ditch on the outside of this pen was another bird unable to fly or walk. This pen was about fifteen feet from the birdhouse and enclosed in it were more than twenty chickens. The birds were placed in a garden away from the chickens and were killed and carried off by cats. Two mornings later on going to feed the chickens a bird was found in a mash pan right under the bird house in a pen in which there were two chickens. The bird managed to flap out of the pan, was picked up, examined and placed away from the chickens. The two chickens were fed a mash mixed in this pan in which the bird had fallen. The pan was not cleaned. A few mornings later the two chickens were found paralyzed the same as the birds. Both birds and chickens had one or both legs and wings paralyzed. The chickens were killed the third day as they could not eat or hold their heads off the ground.

The question in my mind then was what is the difference between the paralysis in the birds, the chickens and the children that were having the paralysis at that time. Evidently the infection was the same. I thought then, how many of these birds are having this paralysis in a mild form as some of the children are, they would be able to fly through the fruit trees and infect the fruit in a large section of country. This fruit might be picked and put in storage for later use or be shipped to some distributing center and sent miles away. This would give us the occasional cases we have at all times of the year. This is evidently an infectious disease as none of the twenty chickens in the pen which were exposed to the bird contracted the disease, and the two chickens which ate out of the pan in which the bird dropped took the disease. Evidently the bird left no droppings in the first pen to infect the food.

This corresponds to our observation of infantile paralysis in children. I have been practicing medicine for more than thirty years, and for eight years was health officer in Marshall county, West Virginia. During the epidemic of 1916 I reported eight cases of infantile paralysis to Dr. Jepson, the state health officer. In no case in my experience could I trace any case either directly or indirectly to any other case, and many children had been exposed and in direct contact with these sick children.

Now, I know there have been many cases in which a contact has been established, but I say in my experience it has not happened.

The question is, has any other physician had a similar experience with the birds or have you seen dead or crippled birds this fall or during any previous epidemic? I do not mean to say that the birds are the only carriers of this infection, but I believe they are the most likely carriers. I reported the bird and chicken incident to Dr. Jepson at the time it happened. He asked me to report the incident to the *West Virginia Medical Journal,* but I neglected to do so. Since we have had another epidemic this fall and I have found two dead birds of the same kind under trees in which they were roosting, I decided to report my observations.

LAVERTY H. MCCUSKEY, M.D.
Moundsville, W. Va.

1833—DR. JOHN TAYLOR HUFF—1925

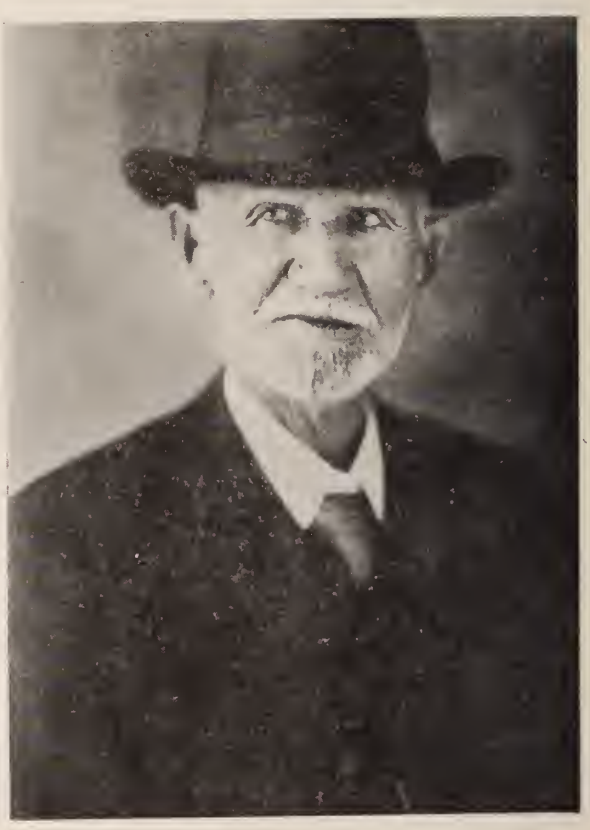
By DR. J. C. IRONS, Elkins, W. Va.

This is the second of the Journal's series of historical articles of particular interest to the medical profession of West Virginia.

Few men are more esteemed by their patrons, or perform greater service for humanity, or are more deserving of fame, than is the old-time country physician, whose day is rapidly and sadly passing away. It is the purpose of the writer to call attention to one of these, who recently ceased from his labors, but whose memory is cherished by scores of friends in central West Virginia.

Dr. John Taylor Huff was born at Port Republic, Va., July 14, 1833. He graduated from Winchester Medical College April 15, 1857. He served, after graduating as demonstrator of anatomy, till the college building was burned, after which it (the college) was removed to Richmond, Va.

About 1859 Dr. Huff located in Highland county, Va., and married a Miss Alexander. of Rockingham county, Va. She lived only a short time, leaving no children. At the outbreak of the Civil War in 1861, Dr. Huff joined the Confederate service, Governor Letcher of Virginia having called for volunteers to repel the enemy, threatening his western border. He was sent as surgeon with the command of Col. George A. Porterfield, with headquarters at Philippi, Va., (now West Virginia). The whole of western Virginia being under the command of Gen. Garnett Col. Porterfield had under his special command five cavalry and nine infantry companies. These were but poorly equipped and had very little military training, and were being drilled by Col. Porterfield, assisted by Captain Daingerfield. On the latter part of May it was learned a large Federal force was being assembled at Grafton, with Gen. Thomas A. Morris in command. To avoid a surprise attack, Col. Porterfield placed pickets on all roads leading to Philippi from the Federal side. Gen. Morris having decided to capture the Confederate force, planned a surprise attack for the morning of June 3, 1861. A part of the Federal force went from Grafton to Thornton when they detrained and under command of Col. Kelley essayed to advance on the east side of Tygarts river, and get in the rear of the Confederate force at Philippi, while a force under Col. Dumont advanced from Grafton on the west side of the river. It so happened that the night of June 2nd-3rd was very rainy, and the pickets on the road to Grafton from Philippi decided the night was so bad no foe would or could approach, so they came in and gave no notice, and the Federal Force had an easy approach, with no



DR. JOHN T. HUFF, who made the first amputation of the Civil War.

disturbance, till they reached College Hill and had placed in position two six-pound brass cannon. The signal for attack was the firing of a gun, when Col. Kelley's force was ready, but whether by accident or on purpose a pistol was fired on the west side of the river, which was mistaken for the signal, and the attack was precipitated, with a complete surprise to the Confederate force, and before the Kelley force was in position

to block escape. In the melee, the Confederates scattered for escape, leaving everything in the hands of the Federals, Dr. Huff losing his kit of instruments and most of his clothing. Captain Leroy Parker Daingerfield was shot through the knee, and a young trooper named Hanger had a limb shot off by a cannon ball. A friend saw Captain Daingerfield, and carried him out on his horse, while Hanger fell into the hands of the Federal force. When the wounded Captain was examined, it was decided that amputation was necessary and Dr. Huff was directed by Col. Porterfield to go to Beverly, thirty miles south and prepare to operate on Daingerfield. The doctor was given a poor half-starved army horse with a blind bridle, to make the trip, while the patient was to be conveyed on a wagon. Hurrying on his way, Dr. Huff found, as he ascended Laurel Hill, his horse was about to fail him. Luckily he fell in with a farmer with a stout horse, and on relating his mission and his fears as to the endurance of the horse, the farmer generously proposed to exchange horses, as he lived near, and he could get his horse at Beverly next day. (I may add here, that years after, while in Beverly attending court Dr. Huff was relating this incident, when a gentleman asked him if he knew who the man was, and when the doctor said he did not but was always anxious to know who it was, and whether he got his horse, the reply was, "I am the man." He was a Mr. Wilmoth from New Interest, now Kernes, W. Va. (He had gotten his horse.) Dr. Huff secured a room in the house of J. H. Logan in Beverly, (house now owned by Mrs. H. G. Kump of Elkins, a grand-daughter of Mr. Logan). Having lost all his instruments, the problem was what could he use. "Necessity being the mother of invention," Dr. Huff secured a butcher knife to make the skin flap, and after search, found a carpenter who supplied a tenant saw, to sever the bone. The operation was performed June 4, 1861. The germ theory of disease and antiseptics was then unknown, and yet Captain Daingerfield made an uneventful recovery and died October 8, 1905.

Whether the operation was done under anesthetic, and what sutures or ligatures were used, we have not been able to learn. When the operation was completed, Dr. Huff asked the owner of the saw if he would sell it and he declined to sell it, but gave it to the doctor. When I saw him in 1910 he told me he still had the saw, and prized it very highly, and thought of giving it to the Smithsonian Institute as a national relic. The saw is now in possession of Dr. Ford Huff, his son, who highly appreciates it. Dr. W. W. Golden and the writer had the pleasure of seeing it while in Parsons, July 28, 1927.

I may relate here, the young man Hanger fell into the hands of a surgeon of the Federal force, whose name I am not able to learn; his leg was amputated by him and he was cared for by the people of Philippi.

These were the first major surgical operations performed during the Civil War. Hanger being a genius, feeling the need of an artificial limb, constructed one for his own use, and it was so satisfactory that soon factories were erected in Cincinnati, Washington, Atlanta and Paris, for the manufacture of artificial limbs.

Dr. Huff returned to the service and was with the Confederate force, guarding the road between Philippi and Beverly, when the Federal forces, under Gen. McClellan invaded Tygarts Valley by way of Buckhannon, cutting off the force of Confederates north of Beverly, under the command of Gen. Garnett, July 13, 1861. This force with whom was Dr. Huff, sought safety by retreating through Tucker, Pendleton and High counties. The advance guard of the Federal force was pushing so closely upon the retreating Confederate force, that Gen. Garnett attempted to rally his force at Corrick's Ford, on Cheat river, about two miles south of Parsons, and was killed under fire, Dr. Huff being near at the time. On this retreat through a mountainous section, sparsely settled, with exceedingly bad roads, the men had to depend on the uncertain support to be obtained from the country people, many of whom were not in sympathy with their cause. Consequently, there was great privation and suffering by both men and horses before they reached safety.

From this time on till Dr. Huff's return to Highland county in 1864, I am not definitely informed, though I have made diligent inquiry. A friend of the doctor's informs me, however, that Dr. Huff told him that he was in the Valley Campaigns with Gen. T. J. (Stonewall) Jackson, when he was playing hide and seek with the Federal forces in the Valley of Virginia, striking when least expected, with such force as to generally gain a victory. I regret that I am not informed as to details, as I know an interesting and thrilling history is lacking.

As you will see from this sketchy history, Dr. Huff made frequent moves, especially while in Randolph county, and it is related that his father-in-law was rather criticizing him and remarked, "A rolling stone gathers

The above caption reads, "This saw cut off leg of the first wounded soldier, War of 1861-5, by Dr. J. T. Huff of Parsons, W. Va."

no moss;" to which the doctor replied, "A setting hen will lose her feathers."

In 1865 Dr. Huff returned to Highland county, Virginia, and soon after married Miss Louisa Moyers, daughter of James Moyers, of McDowell, Highland county, Virginia, and renewed his practice in said county, till Mr. Moyers and family moved to Randolph county, West Virginia.

In 1868 Dr. Huff moved to Randolph county, locating for a short time at Beverly, then moving to a farm about three miles south of Beverly, where he practiced for a few years, till he moved to Huttonsville, thence to Mill Creek, formerly known by the less euphonious name of "Dog Town." In 1880 he again moved to Centreville (Rock Camp) in Upshur county, and in 1884 moved to Buckhannon, where he resided till 1910, when he moved to Salisbury, Md., but only remained a short time till he came to Parsons, Tucker county, where he resided till his death, February 1, 1925, aged 93 years, 6 months, 12 days. His wife died in Parsons in 1918. Eight children, two sons and six daughters, the oldest daughter, Mrs. Sexton, and youngest son, Boyd, died several years ago. Dr. Ford Huff, his only living son, Mrs. Porter Marsh and Mrs. Fletcher Morrison, live in Parsons; Miss Olga, in Easton, Md., Mrs. Lloyd Monroe, Kansas City, Mo.; Mrs. Charles Bishop, Lorentz, W. Va.

Dr. Huff had a very large country practice, most of which he served on horseback. In this work he was greatly handicapped by a peculiar visual defect—technically known as hemeralopia—commonly called "moon blindness"—not being able to see after night, he had of necessity to depend on some one else to guide his horse when making night visits. He was a great lover of horses, and fond of horse trading. In his younger days he was quite an athlete, excelling in sports of his day; being fond of racing, jumping, wrestling, and in feats of strength—rarely being equalled or surpassed by one of his weight. He enjoyed relating ludicrous incidents occurring in his practice, and had a number of them, which he related entertainingly when surrounded by his friends. The last time the writer had any conversation with the doctor he told me he had bought and shipped much of the choicest timber found in Upshur county—poplar, walnut and cherry, when there was no railroad in the county. He said, "If I now had the timber at the price paid for it, and sold it at the prevailing price, since the railroads have reached us, I would not need to practice medicine any more."

While in Buckhannon he was appointed a surgeon for the Baltimore and Ohio railroad, and also a member of the board of pension examiners, though an ex-Confederate surgeon—thus showing that the public had confidence in his integrity and ability.

He has many devoted friends in Randolph, Upshur and Tucker counties where he did

the greater part of his extensive practice. He continued to dispense medicine till after he was over ninety years of age, literally dying in harness. He never sought or held public office, seeming to prefer the quieter life, modestly and unassumingly.

He was a Master Mason, having been elected and initiated to that degree by Highland Lodge No. 10, Monterey, over 55 years ago. He was a communicating member of the Episcopal Church at Buckhannon. The world would be better had we more like him; ever ready to administer to the suffering or needy, rich or poor alike. May it be said of us, as it is of him, "Well done, good and faithful servant."

Muscular Mr. MacFadden

Somebody recently said that the trouble with the medical profession was that it had to be so busy with the scientific side of its activities it could not look after the general trend of the art as it touched the public. One of the leading men of our profession in addressing a very high grade of medical men pointed out to them that an appalling percentage of people in the United States consulted irregular practitioners. He was of the opinion most of this was through ignorance. Prof. Harry I. Hollingsworth, of Columbia University is quoted as having examined 93,000 American men.

"THE AVERAGE MAN"

"Who and what is the 'average' man that we hear and read about so often? Prof. Harry I. Hollingsworth, of Columbia University, has examined 93,000 American men, and as a result arrives at the following specifications for the average:

"Weight, 150 pounds; height, 5 feet 7 inches; his brain weighs 1,300 grams, twice as much as that of a great ape; his pulse beats about seventy a minute. He has a vocabulary of 7,500 words. Ask him to define 'dilapidated' or 'philanthropy' or 'coinage' and he can't do it, but he understands the words 'shrewd' and 'insure.' He cannot accurately distinguish between the words 'poverty' and 'misery', nor can he tell you the difference between 'revolution' and 'evolution.' He can repeat seven numbers; when asked to repeat eight numbers he will leave out one. He quit school at the eighth grade, knows a little history, geography, and a little bit about physiology. He knows practically nothing about government, political science or politics, although he is a voter, and of literature he knows almost nothing. On an intelligence test he rates about the same as the average boy of fourteen. He is very superstitious and believes a lot of nonsense. About all he talks about is the weather and a little exchange of personalities. His religion and politics are usually the same as his father's. And at the age of 53, or before this, the average man will die.

"How do you compare with the 'average man'?"

We shiver a little at this account and our reaction is very much against it but then we never examined that many men as to intelligence.

So to be fair we are going to multiply it by five and use the result. Well what have you? Not a great deal to be sure. But it must come over you all of a sudden why the medical profession, to be quite slangy, fails to "get across" with this appalling percentage heretofore referred to by the celebrated speaker. No wonder electro-cardiographs, and filtrable viruses and reference to the choroid plexsus and attempted explanations of fixation tests fail to impress while the clicking of a bony articulation or a milk diet as a cure for anything and everything does. Out in the great open spaces are a lot of people who an investigator says can repeat seven numbers but not eight without leaving out one.

However the picture, although full of bleak disclosures, is not so much "an empty horror of abysmal night". There never was such a golden age of disseminated medical knowledge as the present one. The oncoming generation especially knows whereof it megaphones its biological truths up and down the high school corridors. "*Hygeia*" has its eager followers.

Intelligent audiences often greet medical men speaking at an open forum or general sessions open to the public. Big dailies strive to have Dr. Copeland and others give descriptions of disease as they really are—although some of them seem to have hired the wrong man. Books of general knowledge have medical sections which strive to give an outline of medical facts, although we saw the other day where one woman said to the other: "I don't have to get a doctor when I'm sick, I got a medical book." The other one replied: "Watch yourself, you

don't die of a mis-print." The great majority know a lot of medical knowledge in an imperfect way which often exaggerates the less important facts which happen to be more graphic and picturesque. But it is not enough. There are too many of Hollingsworth's "average man." He gets in the road. He obscures the picture. He has the very bad habit of yelling out the little bit he thinks he knows which resonates like static on the radio. Furthermore he is on hand to vote and so he has political prestige. He buys tabloid papers and cheap magazines and he piles up circulation. He is on hand in legislatures and his one-track mind by being insistent frightens legislators. He is opposed to science oftentimes in any form so he obstructs its progress, be it evolution, animal experimentation or what not.

After all it isn't his or her fault. Pick out ten men around you who work daily for their living and what time do they have for mental progression? Very little. Sometimes we believe an eight-hour day or a five-day week might be the best thing. The answer comes back; they would not use it if they had it. In other words they would run to the movies; go fishing; see athletic games; or fritter it away in some highly unprofitable manner. When we see what some men are doing in their spare moments and what some of their children in the dreariest of surroundings are achieving we can't altogether believe it. What does all this lead up to? Just this. None of the various expedients we have so far devised to inform the public reaches this "average man." He does not frequent uplift clubs nor forums nor read *Hygeia* nor go to general sessions open to the public. He reads the tabloid newspaper and *True Stories* and so he reads Bernarr Macfadden. Much as it may look like it there is no attempt on our part to scoff at this "average man", nor to juggle about that much abused word "moron" and throw it derisively his way. Outside of a selected few who are prodigies you can't become intelligent in a general way without working for it. "The average man" of Mr. Hollingsworth has usually had no actual time for deep study—no not even superficial study. It took you or us something like six years to grasp the technical side of medicine and a whole lot more time in learning to apply it all. If there was anything simple about it—even its rudiments—we would have come out of it all in comparatively short time. Therefore to carry over so complicated a science to a man who reads "*The Liberty*" in such a hurry the publishers tell you how long you will be in reading the different articles, is to us the very largest order "Medicine" has to fulfill. Dr. G. D. Stewart, head of the American College of Surgeons at Detroit, urges a central health bureau in his inaugural address and deplores the attempts to make specialists of the laity and goes on to depreciate the fact that many persons are attracted to the fantastic and improbable cures advertised in certain magazines and newspapers.

They are going to keep on being attracted until we find some more cosmopolitan or democratic way to reach this "average man" who misses a number when he counts eight.

We met a rather time-honored member of the profession not long ago who said he had reached them at last after many years and he furthermore stated he wasn't going to use a microscope to examine the ethics of it all either. It was by electrical methods. He went on to say that they appreciated the violet light and other such things because they could see them. He had come to believe the various lights and physio-therapies were the all-wise procedures.

Electrical methods and physio-therapy certainly have a wide field of usefulness and as put out by the legitimate concerns do as much and perhaps more than is advertised for them, but if we use them indiscriminately just for their effect upon the unthinking certainly that will in the end curtail their progres. Why? Because at present that is the way thousands of untrained healers throughout the land are using them. But what the time-honored doctor said merely indicates the abject helplessness of the medical profession before this great heedless untutored mass.

There are today a lot of medical men who

are standing up on the mountain top gazing down on the world below and a voice—subtle, insistent and velvet-like—is whispering to them, as they view the big crowd, like ants, crowding into all kinds of irregular healer's offices—"let down the bars a little. It won't matter. All of them will be added to your practices if you just ease off a little and not try to jutify everything you are doing like you have in the past. Split a fee. Overcharge. Fool them on a shot of something or other. Tickle them with a vibrator. Burn them with a light you don't in the least understand. Make a show of nickle plate. Guarantee a venereal cure for $100.00." If you have what in circus parlance passes as "a sucker" use Texas Guinan's axiom "never give him an even break." Follow all the invitations you get to desert the so-called "Medical Trust in Chicago" and numberless other things. The voice is soft and beseeching. Oh, "The dainty lays and dulcet melody."

Perhaps you disagree with us and say, "Away with such rubbish. Thou too art mad." Somebody must agree with us and it is no other than Bernarr Macfadden who writes to you and us on a stamped postal card on which a two-cent change is taken on hundreds of doctors to address the following gentle invitation:

Gentlemen:

I concur with you in your belief that the medical profession and physical culture have much in common and shall be glad to have you list my name as a doctor whose methods of practice uphold the best traditions of both modern medicine and of physical culture.

Name
Street
Town State

This is enclosed when it reaches your somewhat untidy desk, by a ringing editorial by "Bernaar Macfadden—the man who is helping awaken America to health consciousness." Bernarr Macfadden is not a doctor although he might well drop a "d" from his surname and an "r" from the christian and use it who knows how? Anyone who cares to read this can have ours or read it in the June, 1927 number of *Physical Culture.*

The physical culture creed is given also. In addition a letter from the president, O. J. Elder, asks you to let him know what you think about all this. If you are in sympathy then this is what will happen. "We would like to be in a position to recommend such doctors to our readers in these communities." Engaging, straightforward effrontery, is it not? What are you going to say for all that?

This is what you will say: "Why make so much fuss about that? Why take up space for such matter? Use it for another method of taking out the gall bladder or a resume of hookworm in the Island of Tahita?" Let us reason together. Here is a straightforward propaganda that is insinuating itself very thoroughly into the minds of that great big unthinking crowd that has not the time to ponder things out for itself and which positively we do not reach either with our writing or our speaking simply because, if you want to put it that way, we do not speak their language; do not use their idiom. Well, we are going to have to meet them in some way and it is going to take some of the deepest thinking by the best minds in the profession to enable the real truth to be carried lucidly to the average man.

The next step in our study of the progress of physical culture is for it to reach those who do not read its columns. Very easy. So we turn to what is to many readers one of the leading papers in the country. The *New York Herald Tribune,* with a circulation over one-third of a million. On Tuesday, October 4, on page 26 is (with the exception of one column) a full page advertisement for the October number. The headlines read "Wins fight against death from goitre and leaking heart." "Campaign against diabetes produces results." Dr. H. H. Rubin informs you in over two dozen ways what water will do and how it can be employed in relieving and curing human ills. But the main thing is that Edwin F. Bowers, great student and scientist, has written the story of the human body from the standpoint of the man and woman who, having

little knowledge of technical and scientific words, nevertheless want to understand their bodies."

You may laugh at Bernarr Macfadden—perhaps. Yet in the thirty years he has come up to where we should hazard he is very wealthy, almost the Henry Ford of the publishing business. His influence is tremendous with his numerous publications. He likewise owns a metropolitan New York daily. If you doubt his influence, stroll down to your favorite news stand and ask its owner what he thinks. Measured in the terms of success prevalent in America today which in a periodical is circulation and earnings Macfadden is a tremendous success. In America you will be followed if you are such, it makes no difference how you arrived at the point of achievement. It wouldn't in the least surprise us if he was mentioned as vice president on the ticket with Henry Ford as president for these United States.

To paraphrase the old idea, he, while his companions slept, was toiling upward in the night. He is reaching out, to those who have not the time to inwardly reflect, with ideas about health and diseases which to us are undoubtedly unsound. That happens to be merely our idea. The medical profession must reach these same people with an energetic vitalized display of facts. How? That will take some earnest thinking and very bright minds. It is not a question of dealing with a local quack or an ignorant healer without a license; it is dealing with a man who no doubt believes he is right; has a mission; has persuaded himself he is a prophet born of God, to conquer something or other. Well he has the money and power to do it and he will try it in terms of thousands, yes even millions.

Whenever we think of him we are always reminded of Gulliver's Travels. We had a dream about physical culture once. Understand it was only a dream. We found ourselves in a strange and quite unearthly realm. We were tied to a stake and had to look into a crystal ball. It was engaging. Instead of a lot of Lilliputians running around, it was quite a fantastic scene. There was a world of people like ours, coupled with all our adversities including accident and disease. But would you believe it, there were no doctors—no, nor surgeons? Instead of a magazine with arms and legs and funny looking heads circulated in and about and through the populace. We saw an automobile accident. Two men were hurt. Immediately several copies of the magazine popped up—directed him to the hospital, others came along and looking the injured over said they had lived all right according to their pages which they could open with their funny little arms and that nothing need be done. The two men got up and walked away.

We saw a woman in the course of delivery of a child. Three magazines attended her. She was found to have developed a Venus like figure before marriage according to the rules of health found in the pages, she experienced no pain, and washed and attended her own child.

A man really had appendicitis. It seemed he had not read physical culture. His appendix therefore had ruptured. A swarm of magazines gathered around, but he died.

We were just about to see a man with dysponoea and ascitis, recover his breath and shrivel into normal size with a little physical culture on his lap—when we waked up. H. M. HALL, M. D.

What's in a Name?

A name may be a matter of sentiment to the average parent, but it's a business proposition to one West Virginia dentist, who, according to a birth certificate filed with the state health department, has had his recently acquired son christened Clyde Painless Frame. When it was thought a mistake had been made, the father explained that he hoped his son would enter the dental profession and that he was looking out for his boy's welfare.

At any rate, C. Painless Frame is not so bad. If the proud parent had been a medical doctor, he probably would have called his son just plain "Bill."

—West Virginia surgeons who received their Fellowship Degrees at the recent convocation of the American College of Surgeons at Detroit were Dr. James R. Bloss of Huntington, Dr. T. E. Vass of Bluefield, Dr. O. D. Barker of Parkersburg, Dr. Etley Smith of Fairmont and Dr. D. M. Aikman of Wheeling.

—Dr. Robert King Buford of Charleston has recently returned from six weeks' study in Vienna.

—Dr. H. D. Law of Nitro is studying in Europe at the present time and expects to return to this country about the first of November.

—Dr. C. R. Ogden of Clarksburg, president of the state association, spent several days in Baltimore in October.

—Dr. C. A. Ray of Charleston, president-elect of the West Virginia State Medical Association, spent the month of October in the middle west on his annual vacation.

—The wedding of Dr. Hugh Thompson of Charleston and Miss Frances Weimer of St. Albans took place late in September. Dr. and Mrs. Thompson will make their home in Charleston.

Dr. W. A. McMillan of the McMillan hospital, Charleston, recently returned from Canada where he visited his parents.

—Dr. Carl J. Carter of Fairmont, secretary of the Marion County Medical Society, returned from his vacation the latter part of September.

Pennsylvania Meets

The seventy-seventh annual session of the medical society of the state of Pennsylvania was held in Pittsburgh on October 3-6 inclusive, 1927. One of the best meetings in the history of the society was reported.

Crippled Children

At the semi-annual meeting of the West Virginia Society for Crippled Children the president, Fred W. Udy of Bluefield, was authorized to employ an executive secretary to begin work not later than December 1, 1927. Harry Silverstein of Charleston, was elected secretary-treasurer. Plans were laid to have Governor Howard M. Gore appoint the Crippled Children's Council provided by law, and to begin an intensive educational campaign through the office of the executive secretary, designed to secure proper appropriations from the 1929 legislature for the use of this council. Harry H. Howett, who was present, was asked to work with a special committee in the preparation of a new constitution and by-laws for the society.

Back Journal Copies

Dr. James R. Bloss of Huntington, former editor and editor-elect of the *West Virginia Medical Journal,* has in his possession about 500 back copies of the state publication. Dr. Bloss recently informed the journal that he would be glad to send out any number of these back journals upon the request of any member of the association.

The old journals now in the possession of Dr. Bloss date from 1916. Dr. Bloss pointed out that there were many interesting scientic articles in the back journals and stated that he would send out some of them to any member of the association who requested a particular issue.

Dr. Bloss is going to dispose of all of his back journals within the next two or three weeks. If any of the association members wish particular back numbers of the journal, they are urged to write Dr. Bloss immediately, specifying the year and month of the journal they wish to obtain.

WOMAN'S AUXILIARY

Liaison Committee

From the National Auxiliary of the American Medical Association we learn that a liaison committee has been appointed by the American Medical Association, consisting of the executive board of the board of trustees and we hope that by consulting with these men before taking any important steps that we will make fewer mistakes.

Mrs. McReynolds, president of the Woman's Auxiliary of the American Medical Association has promised a letter for this page in the *Journal* for an early date.

Auxiliary Officers

Once during the year there will appear on this page a list of the officers of the state and county auxiliaries to the medical association, and it is hoped that readers will keep this number for reference. There is given below as complete a list as could be obtained at this time:

State Auxiliary—Mrs. B. S. Preston, Charleston, president; Mrs. W. H. St. Clair, Bluefield, first vice president; Mrs. J. P. Lilly, Morgantown, second vice president; Mrs. C. M. Scott, Bluefield, secretary; Mrs. C. A. Ray, Charleston, treasurer.

Cabell County Auxiliary—Mrs. J. S. Klump, president; Mrs. R. J. Wilkinson, first vice president; Mrs. H. T. Brandelburg, second vice president; Mrs. W. E. Neal, third vice president; Mrs. J. W. Ferguson, fourth vice president; Mrs. W. C. Swann, recording secretary; Mrs. C. A. Latham, corresponding secretary; Mrs. W. C. Thomas, treasurer; Mrs. G. D. Johnson, auditor.

Central West Virginia—Mrs. J. B. Dodrill, president; Mrs. Rusmisel, secretary and treasurer.

Kanawha County—Mrs. T. M. Barber, president; Mrs. W. S. Shepherd, first vice president; Mrs. R. H. Walker, second vice president; Mrs. R. J. Ford, secretary; Mrs. R. E. Woodall, treasurer.

Mercer County—Mrs. R. O. Rogers, president; Mrs. B. H. Bird, vice president; Mrs. A. H. Hoge, secretary and treasurer.

Monongalia County—Mrs. W. B. Scherr, president; Mrs. P. B. Arbogast, first vice president; Mrs. W. H. Howell, second vice president; Mrs. Ralph Maxwell, recording secretary; Mrs. E. B. Tucker, corresponding secretary; Mrs. L. W. Coburn, treasurer.

McDowell County—No report.

Parkersburg—No report.

Raleigh County—No report.

Cabell County

Cabell County had its first meeting this fall on Monday, October 3, at the Prichard Hotel in the form of a luncheon at 1 o'clock.

Kanawha County

Kanawha county had its first meeting of the fall on Tuesday, October 11, at 1 o'clock at the Capitol Inn in the form of a luncheon. Reports were heard from the delegates to the state meeting at White Sulphur Springs, also from the chairman on *Hygeia*. About 40 members attended this attractive luncheon. Much credit is due to the committee—Mrs. R. K. Buford, chairman; Mrs. V. T. Churchman, Jr., Mrs. H. T. Glass, Mrs. R. A. Ireland, Mrs. J. B. Lohan, Mrs. M. I. Mendeloff and Mrs. C. A. Ray.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

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C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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PERNICIOUS ANEMIA *

By D. A. MACGREGOR, M. D.
Wheeling, W. Va.

DISEASES OF THE BLOOD have always been profoundly interesting to medical men. At the present time the interest in this subject is somewhat stimulated by certain recent advances in the treatment of one of the more serious varieties of anemia. We thought that it would be of interest to you to review the general subject of the anemias, devoting particular attention and longer time to the subject of pernicious anemia.

Any patient may be said to have anemia in whom we can demonstrate a decrease in the normal number of red blood cells or a decrease in the normal percentage of hemoglobin, or both. This change in the constituents of the blood is not due to the presence of a disease in the blood itself, but instead it is an expression of a pathological process existing in other tissues of the body. We can readily understand that there can be no primary disease of the blood when we consider the origin and fate of the different elements of the blood. The blood corpuscles are made and destroyed outside of the blood channels. The serum is continuously changed as it enters and leaves the blood vessels whenever the opportunity or the necessity arises. From these observations it is evident that the term primary anemia, indicating the presence of a primary disease in the blood, is inaccurate and should not be used. There is one outstanding exception to this rule found in the case of malaria. In this disease the infecting organisms complete their life cycle in the blood stream, destroying the red blood cells which they inhabit, thereby producing an anemia which might be considered primary in the blood. We can recall no other diseases in which anemia is not due to pathological changes in tissues or organs outside of the blood stream.

In the light of these observations we

* From the Medical Division of the Wheeling Clinic, Wheeling, West Virginia. Read before the W. Va. State Medical Association, White Sulphur Springs, June 21, 1927.

might consider all of the anemias as secondary. In some of them the anemia is dependent upon more or less easily recognized pathology elsewhere. This well known group, commonly called secondary anemia, might well be called symptomatic anemia, in as much as the blood changes are the result of a pathological condition elsewhere in the body which can be discovered if searched for diligently. This is not true of pernicious anemia, chlorosis and aplastic anemia. The etiology of these diseases is not so obvious.

The red blood cells are manufactured by the bone marrow. In the presence of rapid blood destruction the spleen and the liver probably assist the bone marrow in their manufacture. When these organs are called upon to speed up the production of the red blood cells many immature forms reach the blood stream. These immature forms include both the large and small nucleated red cells (normoblasts). Their presence in a blood smear is of considerable importance in recognizing the different types of anemia.

The several types of white blood cells arise from different sources. The myelocytes and related forms arise from bone marrow. When they have attained full development they are the polymorphonuclear leukocytes. The lymphocytes originate in the lymphoid tissue, such as the lymph nodes and spleen. The large mononuclear cells arise from endothelial tissue and might properly be called endotheliocytes. An overproduction of white blood cells (leukocytosis) may be present in secondary anemia. Immature forms of the white blood cells may be found in the blood stream under these circumstances. They are differentiated from the mature forms by the shape and size of the nucleus in the polymorphonuclear variety (Arneth's classification).

Within recent years more attention has been paid to the platelets in the blood stream. Probably they will be considered of more importance as we become better acquainted with them. In the presence of an active hemorrhagic disease an increase or a decrease in the number of platelets is of considerable significance. A marked decrease in the number of platelets would point to the presence of purpura hemorrhagica, whereas, a normal or increased count of platelets would indicate accidental blood loss from other sources.

No doubt the condition of the blood serum is of importance in connection with the presence of anemia, but this field is as yet unexplored. The serum has been studied from the standpoint of the presence of certain bile pigments, particularly bilirubin which is one of the bile pigments produced by the destruction of red blood cells. The Van den Burgh test for bile in the blood stream is the only chemical method applicable to the differentiation between the pigmentation due to blood destruction in anemia, and that due to biliary obstruction.

In the microscopic examination of the blood there are certain findings which point to an increased activity of the bone marrow in the production of new blood. We find many immature cells which have been extruded into the blood stream before they have attained full development. We may find: (1) Nucleated red blood cells; (2) polychromatophilic red blood cells; (3) skein cells, (reticulated red cells); (4) macrocytes, (large red cells); (5) myelocytes, (immature white blood cells).

Likewise, we may also find evidences of rapid blood destruction in the microspopic examination. They are (1) fragmentary red cells; (2) shadow cells or ghosts; (3) anisocytosis and poikilocytosis.

A clinical evidence of blood destruction is the lemon yellow color so often noticed in pernicious anemia. As indicated previously it is probably due to the deposition of bilirubin in the tissues by the serum which has taken up the pigment liberated by the destruction of red blood cells. One is very apt to be deceived by the history of the presence or absence of icterus in these cases. In order to be convinced of the presence of the lemon color the physician should see it for himself. The patient's observations and the statements of his relatives are notoriously inaccurate. Occasionally one hears of patients who suddenly turned yellow during an acute illness, as for instance, sea-sickness. Of course, we know that it would be impossible for a patient to acquire icterus in

a few minutes time. In such cases probably a splanchnic dilatation has occurred which has robbed the face of its normal amount of red blood, leaving the natural yellow color of bloodless skin.

We shall now take up the usual signs and symptoms which may be found in any severe anemia.

(1) *Dyspnea.* This symptom is no doubt due to the fact that the loss of red blood cells and hemoglobin renders the blood less capable of carrying oxygen to the tissues. Increased respiratory effort manifested by dyspnoea is nature's effort to overcome the oxygen deficiency.

(2) *Rapid Pulse.* This is probably due to the same cause and is an effort upon the part of nature to bring more blood to the tissues of the body which need oxygen.

(3) *Weakness.* Normal healthy blood with adequate oxygen carrying power is needed to maintain strength and well being.

(4) *Pallor.* The absence of rich red blood will naturally rob the skin of the ruddy glow of health. However, the degree of pallor is not an accurate index to the severity of the anemia. Duke and Stofer have shown that the relatively good color of the skin and lips in some patients with pernicious anemia may be accounted for in part, by the fact that the capillary blood is richer in red corpuscles than the venus blood. Of course, the high color index of pernicious anemia also contributes to this phenomenon.

(5) *Functional Derangements.* Any and all of the systems of the body may be affected. The complaint with which the patient comes to the doctor may be referred to the digestive organs, nervous system, or indeed may be of a cerebral nature.

(6) *Subjective Symptoms.* The commonest subjective symptoms are numbness, coldness, and tinnitus aurium.

(7) *Fever.* The patient does not always have fever but it is a frequent finding. We associate the presence of fever with active blood destruction, but even in chlorosis, in which there is no actual blood destruction, fever is sometimes present.

(8) *Edema.* The patient's weight is not an accurate measure of his well being. What he loses in muscle he may make up by edema. In fact, some patients become so water-logged that their weight is increased in spite of a profound anemia.

(9) *Cardiac and Venous Murmurs.* These murmurs are doubtless due to the altered consistency of the blood itself.

(10) *Organic Nervous Lesions.* A posterior-lateral sclerosis of the cord is present in some degree in practically every patient with pernicious anemia past the age of fifty years. However, these nervous lesions are not confined to pernicious anemia. They are sometimes found in symptomatic anemia, as for instance, in myxedema.

The general classification of the different anemias is very simple. The following is a satisfactory grouping.

(1) Symptomatic anemias (more commonly known as secondary).

(2) Aplastic anemias—due to the failure of the hematopoietic system to properly manufacture blood as in chlorosis and idiopathic aplastic anemia.

(3) Hemolytic anemia—due to excessive blood destruction as in pernicious anemia.

There are other more obscure forms of hemolytic anemia, such as the ictero-anemias or splenic anemias, which are usually congenital and familial. In these cases there is usually an enlargement of the spleen and definite benefit may be expected from splenectomy.

The symptomatic anemias may be due to:

(1) Hemorrhage (a) acute, (b) chronic, (hemorrhoids, excessive menstruation, duodenal ulcer).

(2) Toxic poisoning (lead, zinc, gasoline, benzoil, aniline dyes, and possibly a few from the endogenous toxins of the bowel).

(3) Infections (a) focal, (b) acute, (c) specific.

(4) Neoplasms.

(5) Nutritional faults: Not acute starvation, but monotony and one-sided diet, as in the case of children who have been fed largely on milk to the exclusion of other necessary articles of food. Thomas McCrea has called attention to the danger of a strict vegetarian diet and mentions one extremely severe case of anemia arising from that cause. This particular patient was such a

rabid vegetarian that he even refused to eat non-vegetarian vegetables, insisting that all of his vegetables be fertilized by North Carolina phosphates—not by that rich natural fertilizer so generously provided by the horse, the cow and other domestic animals.

Aplastic Anemia. In our classification the second group of anemias due to failure of the hematopoietic system includes chlorosis and iodopathic aplastic anemia. Chlorosis is very frequently confused with symptomatic anemia, due to nutritional faults, or tuberculosis. It is found usually in adolescent girls. Early in the course of the disease there is a low hemoglobin with practically a normal red blood count. Idiopathic aplastic anemia occurs spontaneously, without any readily discoverable cause, and usually runs a rapidly fatal course. The disease is frequently mistaken for pernicious anemia and energetic but fruitles treatment instituted.

Hemolytic Anemia. The etiology of pernicious anemia, which is the outstanding variety of the hemolytic group, is as yet unknown. It is only within the last fifteen years that pernicious anemia has been looked upon as a disease of increased blood destruction rather than one of faulty blood formation. So long as the manufacture of new blood is able to keep pace with the process of blood destruction the patient shows no symptoms. When the destruction overbalances the production of blood the vitality of the patient sinks lower and lower. It is characteristic of the disease that a remission is apt to occur at the very time we think that the patient's vitality has reached the lowest possible level. For some unknown reason these patients are apt to experience a spontaneous and remarkable increase in the ability to manufacture new blood just at the critical time when it is most needed. An improvement in all symptoms occurs in conjunction with improvement of the blood picture and the patient may not only approach his former condition of health, but also maintain this condition of well-being over a considerable length of time. The spontaneous relapses and remissions in the course of a typical case of pernicious anemia constitute a most remarkable phenomenon, and the fact that this change sometimes occurs without treatment makes it extremely difficult to properly evaluate new methods of treatment, during the administration of which patients experience a remission of their symptoms.

The destruction of the red blood cells in pernicious anemia is probably the result of the action of a hemolytic toxin. Just what the toxin is remains to be discovered, but it is probable that it is derived from a chemical change in the protein molecule, resulting in a toxic split-protein product. The source of this toxin is probably the upper intestinal tract. In proof of this theory endless experimentation has been carried out by research workers. The typical picture of pernicious anemia has been produced in dogs by inducing an obstruction high up in the intestinal tract. The same blood picture is found in that tropical infection called Sprue, in which there is a chronic ulcerative process in the small intestines. Clinical investigations in pernicious anemia have repeatedly shown an increase in the intestinal flora of the upper intestinal tract. This region, which is sparsely inhabited under normal conditions, usually shows a luxuriant flora in pernicious anemia. The organisms which predominate are: Bacillus Coli communis, Bacillus Welchii and Bacillus Proteus.

One of my associates in the Wheeling Clinic, Dr. W. M. Sheppe, has also called attention to suggestive findings at the autopsy table. In at least three cases of pernicious anemia which came to complete autopsy, he found not only the frequently described changes in the stomach, but also a leather-like thickening of the mucosa in the duodenum and upper jejunum. This pathological change in the upper intestinal tract was so pronounced as to practically obliterate the lumen of the duodenum at certain points. So far as I am aware this observation has not appeared elsewhere in the literature.

The diagnosis of pernicious anemia can usually be made quite easily by a combination of laboratory and clinical observations. In addition to a decreased red blood count and hemoglobin the laboratory reports in

a typical case of pernicious anemia usually show the following findings:

(1) Low white blood count (leukopenia).

(2) Anisocytosis, macrocytes, microcytes and nucleated red cells. Poikilocytosis and reticulated red cells.

(3) Increased color index (Hemoglobin divided by per cent of R. B. C.)

(4) Increased volume index. (Volume of corpuscles divided by per cent of R. B. C.)

Clinical observations in typical cases of pernicious anemia usually reveal the following outstanding features:

(1) The general characteristics of anemia as outlined previously in this paper.

(2) The icteric color of the skin, due to increased blood destruction.

(3) Neurological changes which may be found at any age, but which are almost invariably present after the age of fifty. Cord changes, not readily explained otherwise, are looked upon by some internists as an indication of pernicious anemia in the absence of a genuine anemia of the blood. If in addition to the neurological lesions the patient has no hydrochloric acid in his stomach contents, the diagnosis is unescapable.

(4) Glossitis—One of the earliest complaints and frequently the symptom which gives the patient the most distress is the sore tongue. The pathologists have called our attention to the atrophy of certain papillae of the tongue and of the frequent presence of ulceration at the base of the tongue. These findings may be correlated with the atrophic changes in the stomach and duodenum.

(5) Gastric symptoms, such as nausea, vomiting, anorexia, indigestion and aversion to meat. The absence of hydrochloric acid in the stomach is undoubtedly responsible for these gastric symptoms. Many clinicians regard achlorhydria as the most important point in the diagnosis of pernicious anemia. chloric acid is regarded by some as an indi- As mentioned above the absence of hydrocation of possible pernicious anemia even when no blood changes are present. Wm. F. Cheney (*J. A. M. A.*, July 3, 1926) observes that pernicious anemia cannot be diagnosed without achlorhydria. Whenever achlorhydria is found, one should think of pernicious anemia, present or to come.

TREATMENT

A satisfactory treatment of pernicious anemia has not as yet been evolved. The great number of methods which have been espoused and abandoned tell the story very eloquently. The spontaneous remissions that patients have had under all forms of therapy have led to erroneous conclusions and false enthusiasm for methods subsequently discarded. Let us review the therapeutic armamentarium as applied to this disease.

(1) *Medicinal Treatment.* (a) Iron. Iron has been used in large quantities in the treatment of these patients. It is not of very great value in as much as pernicious anemia is a disease of blood destruction rather than a failure of blood formation. Deposits of iron are to be found in the liver and other internal organs of patients suffering from the disease. It would appear that their trouble is not due to an iron deficiency, but on the contrary they seem to have an abundant supply accumulated through the destruction of their own blood.

(b) *Arsenic.* Arsenic in various forms is still used and is considered of some value as a stimulant to the hematopoietic system. In my personal experience I am convinced of the favorable effect of arsenic in the form of sodium cacodylate. However, there is the same theoretical objection to arsenic as to iron in as much as it probably has no value whatsoever in the prevention of blood destruction.

(c) *Germanium Oxide.* At one time this drug was heralded as a great discovery for pernicious anemia. At the present time is looked upon as a rank failure.

(d) *Hydrochloric Acid.* The achlorhydria calls for systematic treatment with hydrochloric acid, the administration of which assists the patient in the digestion of a well

rounded diet. No doubt the improvement noted after its administration is due to the fact that the patient can make better use of his food. Furthermore, it is possible that the administration of hydrochloric acid may inhibit the growth of the pathological flora of the upper intestinal tract which have been mentioned above as the possible source of the hemotoxins. In this connection I wish to call attention to the inadequacy of the ordinary fifteen drop doses of this drug. If we wish to obtain the physiological effect, it is necessary to give it in at least one-half drachm to one drachm doses, three times a day. A pleasant way in which to administer it is to have the patient take it in a glass of water together with the juice and pulp of an orange.

(2) *Transfusion of Blood.* In pernicious anemia an increased bleeding time is usually found. Transfusions by the direct method would tend to correct this difficulty. Transfusions by the citrate method, on account of the addition of sodium citrate to the blood plasma, may increase the patient's bleeding time still more, and certain accidental hemorrhages have been reported which were attributed to this method of treatment. We have in mind one case of our own in which copious and fatal uterine hemorrhage followed citrate transfusion in a case of pernicious anemia. However, the citrate method has been used routinely in some clinics, with benefit to the patients and with no serious accidents.

We have been very partial to the treatment of pernicious anemia by means of direct transfusions. We feel that numerous small transfusions (250 to 300cc) are probably of more benefit as a stimulant to the blood-forming organs than large transfusions given less frequently. Furthermore, we are able to corroborate observations made by others to the effect that the blood from certain donors is much more efficacious than that taken from others. We have a feeling that the full blooded apoplectic type of donor furnishes a better quality of blood. When the same donor is used a second time for a patient it is necessary to have their bloods re-matched. The respective grouping of donor and recipient does not change, but it is possible for the recipient to develop in his blood certain anti-bodies or agglutinins which are specific for the blood of the particular donor and which render his blood unfit for use a second time. The first transfusions given to a patient usually show better results than subsequent transfusions. In some cases a single transfusion is sufficient to stimulate a patient's blood-forming power so satisfactory that a remission occurs without further treatment. In the second, third and fourth relapses the response is not so good, and more frequent transfusions are necessary. One case has been reported by J. L. Yates and Wm. Thalheimer (*J. A. M. A.*, 12-25-26) in which a total of 113 transfusions were given. This particular patient was hard to handle; did not cooperate in other efforts at treatment, feeling that he could buy a sufficient quantity of blood for his purposes as long as necessary. The 113 transfusions were given inside of two years' time and the patient died five weeks after the last transfusion.

(3) *Splenectomy.* Only a few years ago splenectomy for pernicious anemia was advised and tried with great enthusiasm. A remission in the course of the disease follows splenectomy in about 65 per cent of the cases. This serious operation is attended by a rather high mortality, in this class of patients, whose vitality is seriously impaired. Unfortunately, those patients who have a splenectomy are just as liable to a second relapse as are patients treated by other methods.

(4) *Radiation.* X-ray and radium have been proposed in the treatment of pernicious anemia, but so far have failed to produce satisfactory results. It seems to us that the most rational application of radiation in pernicious anemia would be an attack upon the spleen. Surgical splenectomy is a recognized method of treatment and certainly a medical splenectomy by radiation could be expected to accomplish quite as much for the patient without the added risk of surgery. Radiation of the trunk and long bones has been advised. Small irritative

doses are used in order to stimulate the bone marrow to greater blood production. Alpine light treatments are also of very great value for the same purpose.

(5) *General Measures.* In this disease as in most others the experienced clinician resorts to certain measures to improve the patient's general physical condition. Rest is very essential in the treatment and usually the patient is so weakened by his anemia that he is quite willing to accept the advice. A change of climate has often been tried with satisfactory results of a temporary nature. Perhaps the increased appetite and the stimulation of a different environment affect the patient favorably. Psycho-therapy, useful in the treatment of practically all the illnesses of mankind, finds a field of usefulness in this disease.

(6) *Dieto-Therapy.* It is obvious that the importance of a proper diet should be recognized early in treatment of a chronic wasting disease like pernicious anemia which is characterized by digestive disturbances. As early as 1863 Habershon called attention to the value of a nutritious and stimulating diet. In 1875 Pepper mentioned the value of easily digested foods in the medical treatment of this disease. Recommendations of a genesal nature have found their way into nearly every treatise on the subject since that time.

A few men have laid emphasis on certain kinds of diet and certain articles of food. Fenwick in 1887 recommended a diet low in carbohydrate and high in protein. On the other hand Hunter in 1890 recommended a diet high in carbohydrate and low in protein.

For the most part the diets advised for anemia have featured meat and leafy vegetables. Meat was selected empirically with the idea that meat contains blood and from its nature should be a strength-giving food. The value of leafy vegetables was early recognized as due to their relatively high iron content. The blood building qualities of such vegetables were easily demonstrated by their use in the treatment of chlorosis.

An immense amount of experimental work has been done in an effort to determine the value of different proteins with respect to blood formation and body growth. In 1923 McCollum pointed out that liver and kidneys afford a protein of high quality in concentrated form which is capable of enhancing the growth of animals. In 1925 Whipple and Robscheit published the results of their experiments which shows conclusively that liver, heart and muscle are of great value in stimulating blood production after acute hemorrhage in experimental animals. The work done by Whipple and his associates was the most valuable contribution to the study of diet in anemia. In the light of their observations, Gibson and Howard, Fenlon, and lately Minot and Murphy have all advised diets low in fat and rich in protein, particularly liver. The fat is decreased because many observers have noted the hemolytic properties of certain derivatives of fat. Carbo-hydrate in the form of leafy vegetables and fruit is recommended not only because they are a wholesome part of any diet, but because they are particularly useful in the production of hemoglobin.

The following is the diet recommended by Minot and Murphy:

1. From 120 gms. to 240 gm. (4 to 8 ozs.) or more of cooked calf's liver or beef liver. An equal quantity of lamb's kidney may be substituted occasionally.

2. 120 gms. (4 ozs.) or more of beef or mutton muscle meat.

3. Not less than 300 gm. (10 ozs.) of vegetables containing from 1 to 10 per cent of carbohydrates, especially lettuce and spinach.

4. From 250 to 500 gm. (8 to 16 ozs.) of fresh fruit, especially peaches, strawberries, pineapple, oranges and grapefruit.

5. About 40 gm. (1 1-3 ozs.) fat derived from butter and cream allowed in order to make the food attractive. However, animal fats and oils should be excluded so far as possible.

6. If desired an egg and 240 gm. (8 ozs.) of milk.

7. In addition to the above mentioned foods, breads, especially dry and crusty, potatoes and cereals in order to allow a total intake of 2000 to 3000 calories, composed usually of about 340 gm. (11 1-3 ozs.) of carbohydrate, 135 gm. (4 1-2 ozs.) of protein, and not more than 70 gm. (2 1-3 ozs.) fat.

8. Very sweet foods should not be given, but sugar may be allowed very sparingly.

We have been using this diet for several months in the treatment of both pernicious and severe symptomatic anemia. From our limited experience with it we are inclined to accept Minot's optimistic opinion of its great value as a blood builder. It is truly remarkable to see how well these patients take their diet. When the appetite is very poor they are asked to take as much as possible always using the liver first. In a short time the appetite increases. After the second week they are often hungry and take the full diet without any trouble.

Clinical improvement is usually evident in two weeks after beginning treatment. Improvement in the blood picture occurs earlier. The evidence of rapid blood formation as shown by the increased percentage of reticulated red cells appears in one week.

The most remarkable feature in the progress of these cases is the fact that the icterus index begins to fall after the first week and usually reaches normal at the end of a month. With the loss of pigment from the blood serum the patients lose their lemon color. This may mean that excessive blood destruction is curtailed at the same time that blood production is stimulated, or that the store of blood pigment in the serum and the tissues is used in the manufacture of new red blood cells.

Instead of attempting to give you detailed statistics on our series of pernicious anemia cases treated with this diet we shall for the sake of brevity consider a single one which illustrates the rapidity of improvement which may be expected in the average case.

Mrs. W. J. came to the Wheeling Clinic, January 7, 1927, complaining of profound weakness and numbness of the extremities. Physical examination revealed edema and evidences of spinal cord involvement. Gastric analysis showed an entire absence of hydrochloric acid. At that time she had 2,230,000 red blood cells and 50 per cent hemoglobin, a color index of 1. Two weeks later, January 21, 1927 she had 3,790,000 red blood cells and 67 per cent hemoglobin. Her next visit was February 4, 1927, approximately one month after her first visit, and she then had 4040,000 red blood cells and 85 per cent hemoglobin. Her last visit was on April 6, 1927, that is three months after the beginning of treatment, and she had at that time 5,160,000 red blood cells and 90 per cent hemoglobin.

None of our cases have failed to show a prompt improvement. They have not all done as well as the one chosen for illustration. We have not had an opportunity to observe them over a long period of time. We do not know how long we may expect the improvement to last. Minot and Murphy have reported a series of forty-five. A few of them have been under observations over two years. So far none who have continued the diet have had a relapse. Richards and Daines, Salt Lake City, have recently reported a large series with equally favorable results and it is interesting to note that they do not restrict the amount of fat in the diet.

On the whole we are inclined to be quite optimistic about the prospects for the dietetic treatment of pernicious anemia. We still avail ourselves of blood transfusions in desperate cases and advise the routine use of hydrochloric acid along with the diet. It is hardly likely that the liver diet is the final solution of the problem of pernicious anemia. We must guard against overenthusiasm. It is too early to reach a final decision as to its real value. However, we feel very strongly that at the present time the very best medicine we can prescribe for pernicious anemia is a half pound of giblets every day.

THE FORMATION OF GALL STONES *

By J. E. SWEET, M.D., Sc.D
New York City

THE acceptance of the honor of an invitation to address such a gathering as the West Virginia State Medical Association involves a responsibility which successfully removes all the pleasure it would seem that one should have in accepting honors. This responsibility rests in the choice of a proper subject.

I have chosen as my subject the formation of gall stones, first, because I, myself, am interested in the study; second, because most physicians are more or less interested in gall stones; but third, because I thought that I could draw from such a presentation, ideas of, perhaps, more general interest to the practitioners of medicine and surgery. I have in mind the presentation of what was called in the olden days an apology, when the word was used not in the modern sense of offering an excuse for wrong doing, but in the old sense of an explanation. Such was, for instance, Tertullian's "Apology for Christianity," not in the sense of an excuse for Christianity, but as an explanation and defense of Christianity.

And this because it seems to me that the practitioners of medicine must often wonder why so little seems to come out of the research efforts that are being made, out of the great institutions organized for research, and out of the vast mass of scientific and medical literature.

Perhaps, then, what I most wanted to tell you was not how much we know about the formation of gall stones, but why we know so little. One of the most remarkable phenomena of human progress is the extent of the development along certain lines, the foundations of which are entirely unknown. The best example of what I have in mind is the extent of the development of the practical application of electricity without any basic knowledge as to the fundamental thing being developed. But there comes a time when further advance depends upon the development of this basic knowledge; then we have to stop and go back and work out a new language of ions and cations and electrons.

It seems that we are in about this situation today in respect to medicine. The practical advances which have been made within so short a span as my own memory are remarkable. These advances are not entirely satisfying, because they have gone so far ahead of basic knowledge. Now we must stop and go back to the starting point. Like a crawfish with his eyes toward the future, we must scuttle backward at high speed.

For example, we have devised very practical operations upon the gall bladder. We have listened for many years to highly entertaining battles between the -ostomy and the -ectomy schools, but no one today knows who is right, nor will it be known until the basic fact has been settled—what is the gall bladder for? There are forty ways or more of operating upon gastric ulcer, but none of them seem to give much satisfaction to the patient. There are many ways of treating cancer, but there does not seem to be any very sure way of curing it.

These, then, are the points I wish to illustrate to you men of practical medicine. First, we have gone a long way, but about as far as we can go on the basis of our fundamental knowledge, and therefore, second, the necessity for going back to the beginning and endeavoring to find out not what we are going to do about it, but what it is we are dealing with; and third, that this type of development must bring with it a new terminology and a new language. I think I know how you feel as you pick up many modern articles, for I confess to the same feeling myself when I try to follow some of the newer work in heredity, or

* Presented on June 22 to the West Virginia State Medical Association at White Sulphur Springs.

when someone tries to talk to me about the vegetative nervous system. Then I find myself compelled to think in new terms in connection with a subject as old as gall stones and I discover a sympathy with the younger generation.

I have found no statement bearing upon the earliest human interest in gall stones, although it is probably that Noah took at least two of them into the ark, but the study of the liver by the early soothsayers must have brought with it the finding of stones in the gall bladder. Some early observer broke such a structure in two and noted that it was composed of crystals which seemed to radiate outward from a central point. The observation of the growth of radial crystalline structures around some foreign particle in a solution, was compared to this arrangement in the gall stone, and from that day until the present no one seems to have questioned that gall stones arise from a center or nucleus and gradually grow evenly in all directions, sometimes with alternate deposits of material of different colors.

In such a concept the essential fact is, therefore, this nucleus, and this nucleus has constituted the point of greatest interest in the problem of the etiology of gall stones,—no nucleus,—no gall stone. Some found this nucleus to consist of an aggregation of bile pigment coming from the liver cells which collected in the gall bladder; hence the cause of the stone was to be sought in the disturbance of the liver cell which resulted in the formation of insoluble pigment granules. Others found bacteria in gall stones,—hence no stone without previous infection. And today there are many who still look for a history of typhoid in cholelithiasis, even though the practical disappearance of typhoid fever from modern medicine does not seem to have brought with it any diminution in the number of cases of cholelithiasis.

There have been difficulties noted in this concept of the origin and growth of gall stones which have proven almost insurmountable. Not infrequently a gall stone is only a hollow shell, this hollow containing a clear fluid. The difficulty of explaining how an empty space can act as a nucleus, has required some very complex and elaborate logic. The idea that the gall stone is laid down in layers, requires a similar complicated explanation, when we find in stones of triangular and square cross section that this building-up process must have occurred in the corners only. If we examine the section of a crystalline stone we will find the large crystals in the center, the small crystals at the periphery. It is a well known fact in crystallography that the first crystals formed are the small ones. It is also a fact of crystallography that the point where the crystals formed last is marked by the greatest amount of impurities.

It, therefore, occurred to me to study gall stone formation from a point of view directly opposite to that which has been accepted from time immemorial. Let us assume that such a structure as a gall stone starts as a colloidal mass of the size and shape of the finished gall stone, this colloidal mass being composed of the two essential constituents of gall stones, cholesterel and calcium, each in the colloidal state and perhaps each assisting the other in normally remaining in the colloidal state. Some process occurs which separates the mixture of these two substances, such as the formation of a precipitate of the calcium with the bilirubin of the surrounding bile, as a result of which separates, both pass from the colloidal into the crystalline state. This crystallization starts on the outside and proceeds toward the center, the crystals pushing impurities or even enclosed aggregates of pigment ahead of them, until these foreign bodies come to lie like a nucleus, but not as a nucleus, in the center of the stone. Such a concept involves an excursion into the newer fields of physical chemistry; it adds to the burden of the student of medicine; but there is no help for it, since it is but an instance of the necessity of progressing backward until we can base a new forward movement upon an understanding of the basic principles of life.

As far as gall stones are concerned, the concept is not particularly hard to understand if we remember that a colloid is sim-

ply a loosely held aggregation of stone between which other substances can readily pass, while the crystals represent the same atoms arranged in a definite order close together, and so fixed in this position that other atoms cannot pass between them. The change from one condition to the other is therefore in reality only a slight change requiring neither extensive chemistry for its accomplishment, nor intensive cerebration for its understanding.

If such be the method of origin of gall stones, one would expect them to appear under either of two conditions. There is no doubt but that the material of which a gall stone is chiefly composed, cholesterol, does pass through the wall of the gall bladder into the lymphatics. I, personally, believe this to be one of the normal functions of the gall bladder. If this be so, then a stoppage of these channels of absorption, as by infection, that is, lymphaginitis, of the gall bladder wall would result in an accumulation of a material because it could not be absorbed. On the other hand, if this material reached the gall bladder in an abnormal state, it could not be absorbed. These two conditions I believe we have, cholelithiasis associated with cholangitis, and cholelithiasis following some disturbance of general metabolism such as pregnancy, or certain of the anemias. Shall we remove a gall bladder because it contains stones, then? I am inclined to feel that the deciding factor should be, simply, the condition of the gall bladder wall, and that cholecystectomy should be done only if the gall bladder itself shows elements of disease.

DISCUSSION

Dr. O. B. BIERN, Huntington:

I shall not attempt to discuss this paper, but I should like to know if gall stones are physiological or pathological.

Dr. SWEET, closing the discussion:

The answer to your question, Doctor, compels me to admit that I am that unfortunate gentleman who a few years ago stated that he believed the gall bladder is an organ of absorption and that the cystic duct is a one-way tube and what goes into it never comes out again, normally. I still believe that. If that be true, that the gall bladder is an organ of absorption, and the absorptive mechanism has been destroyed by infection, you would get an obstruction by material which can not be absorbed. On the other hand, if the material brought to it is not normal, then there would be obstruction because it could not be absorbed. So I can conceive that you can get gall stones from two sources. The first type of gall stone is the one produced when absorption is interfered with by an infected gall bladder wall. I may state in defense of my own position that the question is not whether the gall bladder absorbs, or not, because I think every one admits that. The second type of gall stone is one associated with some disturbance of the general metabolism, such as we see in pregnancy.

"TONSILLOLITHS" (With Report of Case) *

By E. C. HARTMAN, M. D.
Parkersburg, W. Va.

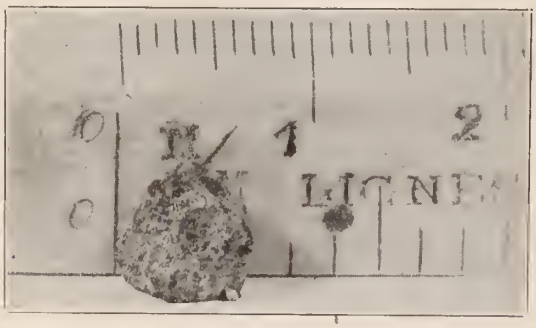
TONSILLOLITHS — Tonsil calculi — Tonsil Stones—Calcified Concretions, as the terms imply, are calcareous deposits of various sizes and shapes, forming within the crypts or substance of the faucial or pharyngeal tonsils—more commonly the faucial.

History: As early as the sixteenth century the following men have reported cases of tonsilloliths: Lang, Terrellon, Keutmann and Schenk. In the seventeenth and eighteenth centuries Hoffman, Bailheron, Bourquet and Souque. The nineteenth century Wilson reported three cases, two being members of the same family.

In 1901 Kayser reported a large calculus occurring in the upper pole of the left tonsil of a twelve year old boy. About the

* Presented on June 22, 1927, to the West Virginia State Medical Association at White Sulphur Springs.

same time, cases were reported by Jacques, Gwarnaccia, Gray, Mabon, Struyken and de Simoni in patients of various ages. In 1904 Dr. Chevalier Jackson reported a case of calculus weighing 147 grains. In 1908 Anders of Philadelphia reported a case of calculus weighing 189 grains occurring in the right tonsil of a woman aged 59. The calculus was coughed out in an effort to relieve a severe attack of choking. Swain in 1920 reported a case of calculi being removed from the same site four times during a period of 29 years. The same year Mueller showed two by X-ray of the tonsil region. In 1920 Woodman reported the removal with forceps of a recurrent calculus of such size that the anterior pillar was lacerated. This was studied by radiography after removal and was found to be very opaque to rays, showing definite radial



striae near its periphery. In 1924 Carl V. Weller, pathologist, Ann Arbor, Michigan, prepared an excellent paper on "The Incidence and Pathogenesis of Tonsillar Concretions," backed by the records of examinations of 16,000 pairs of tonsils in his laboratory, in an effort to ascertain the frequency, etiology and composition, both chemically and bacteriologically. To him I am indebted for a large amount of the information on the subject, especially as to the composition of calculi.

Not infrequently during a tonsillectomy one expresses gritty, calcareous concretions from the crypts, especially in the region of the upper pole, but calculi of large size are comparatively rare. Occasionally we hear a patient relate an incident of expectoration of a small hard gritty substance from the throat, which in most instances is from the tonsil, and upon examination will be found to be a calculus.

Clinical analyses of tonsilloliths by Langier show them to be alkaline in reaction and composed of: Water, 25 parts; calcium phosphate, 50 parts; calcium carbonate, 12.5 parts; organic matter, 12.5 parts.

The organic matter is mostly epithelial cells, masses of leptothrix, and vegetable material. Rosenberg reports traces of iron, potassium, sodium and chlorin in addition to the above constituents. There is quite a similarity to salivary calculi.

Weller has shown from a microscopic examination of 1000 consecutive pairs of tonsils, that calculus formation appeared in eight per cent of the cases, most of which were of insufficient size to be of clinical importance. They were practically always primarily of crypt origin, and beginning in or upon necrotic organic material. Even in the large colonies of mouth organisms in the tonsil crypts, it is only the dead interior which exhibits calcification.

The process conforms in this respect to the general law of development of calculi elsewhere in the body. Inspection and X-ray examination show structural similarity in the way of concentric laminations and radial striations characterizing most calculi. Calcareous deposits in the tonsil, as seen by microscopic sections, occur in various situations and in various organic matrices as shown by the following table by Weller:

1. Within the tonsillar crypts they arise from, in order of frequency, from (a) Colonies of mouth organisms; (b) keratohyalin; (c) vegetable material (food debris); (d) lipoids (cholesterin, etc.); (e) inflammatory exudates—purulent or mucopurulent (pharyngeal tonsils); (f) blood (hemorrhage).

2. Within the lymphoid tissue in (a) old abscesses; (b) hemorrhagic areas; (c) caseous necrosis of tuberculosis; (d) Langhan's giant cells of true tubercles.

3. Within the stroma and capsule (a) chiefly in cartilage preparatory to endochrondral ossification.

Calculi of large size are seen most fre-

quently in adults and records show a great tendency to recurrence, if the tonsils are not removed. Grossly they are usually rounded or oval and granular in appearance, of yellowish grey or light brown color, and sometimes of greenish cast. Practically all tonsil calculi have their origin in the tonsil crypts, especially where there is a cystic dilatation or pocket formation left from a crypt abscess. The calculus causes an inflammatory reaction, ulceration and purulent exudate from mechanical pressure on the tissues and bacterial invasion.

Symptoms: The usual train of symptoms are:

1. *Subjectively.* The patient complains of frequent and rather prolonged attacks of tonsillitis, usually unilateral or persistent on one side, with considerable soreness and pain on deglutition, more from the ingestion of liquids than solids, a sensation of something like a foreign body sticking in the throat, and an inability to relieve the situation by clearing or coughing is experienced.

2. *Objectively.* There is a unilateral swelling and redness in proportion to the size of the calculus, most frequently in the region of the upper pole or supra-tonsillar fossa. There is tenderness on slight pressure and if the calculus is not showing can be probed in the crypt, giving the characteristic gritty sensation.

Case Report: Mrs. E. B., age 35, white, American, erect figure, weight 120 pounds, height 5 feet 10 inches, fairly well nourished.

Family History: Father, three sisters and two brothers are living in good health. Mother and two brothers are dead. Mother died of cardio-renal disease at age of 54, had history of frequent attacks of tonsilitis. Both brothers died of pneumonia, one 41 years and one 21 years. The elder one most probably had T. B. as she stated he had a severe cough almost all his life and pleurisy occasionally.

Personal History: Patient has had all the common diseases of childhood, pneumonia and influenza 1918. Severe attack of appendicitis with adhesions, was operated upon in 1922. Has had chronic cystitis for past few years and has to have irrigations occasionally. Has had rheumatic pains for years in different parts of body.

Present Complaint: On July 21, 1926, patient came to me complaining of sore throat more pronounced on left side and stated she had a sore throat on one side for six or seven years, more severe at times, but never free from some soreness. The soreness was accompanied by a sensation of sticking, like a briar when she swallowed. She complained of a frequent soreness of the tongue and muscles of the neck and various rheumatic pains.

Examination: Appeared unusually nervous. A very anxious facial expression, and moist skin. Breath was perceptibly bad. Examination of mouth showed several badly decayed teeth.

Throat: General redness of throat and

injection of pillars especially pronounced on the left side, characteristic of a chronic tonsillitis. Tonsils were of average size, and semi-submerged. Caseous material expressed on pressure, with some sero-pus from left. Patient complaining of being very tender and sore at the time. On account of the extreme redness and apparently acute appearance of the inflammation I deferred operating for three weeks and in the meantime treated her throat about every third day with various solutions and applications with no results on the left side. At the end of the third week I decided to do the tonsillectomy regardless of the congestion present on the left side. The tonsils were localized with novocain and adrenalin in the usual manner. The right tonsil was removed first by dissection and snare method.

The left tonsil was separated and wire slipped over, and during the closure of the wire loop, to my surprise the calculus dropped out on the back of her tongue and was difficult to recover. This case was unusual in that, there was no prominence in the tonsil that indicated a stone or even a large crypt orifice.

Examination of the tonsil after operation showed a large pocket, the outer wall of which was made up of thin capsule situated about the middle of the tonsil. There was a quantity of sero-pus present in the cavity. The patient made an uneventful recovery and has not complained of any further soreness since.

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THE IMPORTANCE OF AN EARLY DIAGNOSIS OF FOREIGN BODIES IN THE AIR AND FOOD PASSAGES *

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FOREIGN BODIES in the air and food passages are by no means rare. It is a common accident of childhood and frequently the victim is an adult.

We have often wondered just how many human lives are sacrificed each year due to the lack of an early diagnosis of the condition, or (indeed) due to the failure of making a diagnosis at all.

Of course, there are many cases in which the immediate termination is not death. Of these we find numbers who have been diagnosed as suffering from tuberculosis, recurrent pneumonia, bronchitis, empyema, stricture of the esophagus, mediastinitis, pleurisy and what not.

Many failures in making a diagnosis are due to the fact that the physician fails to take into consideration the underlying cause of the symptoms, which may be due to a foreign body in the air or food passages. To illustrate, let us consider Case No. 1:

J. E. C.—6 years. Parents give history of child choking on a tack ten weeks ago. He was playing, laughing, and talking when suddenly he choked and became very cyanotic. In a few minutes he recovered and seemed to be perfectly normal. The parents remembering that the child had had a tack in his mouth and thinking that possibly he might have swallowed it, called their physician. When he arrived the boy seemed to be all right and was without symptoms, so the parents were told not to worry and were assured that if he had swallowed the tack it would be passed in a few days. Two days later he became acutely ill and vomited, and on the fourth day a diagnosis of pneumonia was made. (Evidently the possibility that a foreign body might be the cause of his symptoms was not considered.) He was in bed for three weeks during which time the acute condition apparently subsided, for

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he was allowed to be up and about for a week. The symptoms now returned and he again developed all the signs of pneumonia. Since resolution did not take place in the course of seven weeks fluid in the chest was suspected and a paracentisis pluralis was done. A little fluid was obtained. He was now sent to a hospital where an X-ray of the chest was made and a rib resection was done. A quantity of fluid was found. A few days later another X-ray was made and the shadow of a tack was found. A diagnosis of a foreign body in the right lung was made. The patient was brought to the Ohio Valley General Hospital. Physical examination disclosed an under-nourished child with all the signs of a right-sided pneumonia. A bronchoscopic examination was made. The tack was found protruding from the right middle lobe bronchus with its point tightly imbedded in the mucous membrane of the right bronchus. The membrane was greatly swollen and edematous and the right bronchus filled with pus. The point was dislodged with great difficulty and was then grasped with forceps. Considerable traction was required to remove the tack since the mucous membrane of the middle lobe bronchus was apparently tightly swollen about the head. After its removal, large quantities of pus were removed from the bronchus by suction. Recovery was rapid and in a short time the boy was entirely well.

This case shows the importance of making an early diagnosis of foreign body. Had an early diagnosis been made, the chances are that the child would have been saved from a severe attack of pneumonia followed by paracentisis pluralis and rib resection. Of course the mechanical problem of the tack's removal was made much more difficult since in the ten weeks following the inspiration of the foreign body the mucous membrane became greatly swollen and the bronchus and its branches filled with pus. We should all remember that when a healthy child who is playing, suddenly chokes with or without cyanosis, the possibility of the inspiration or swallowing of a foreign body should be considered and a careful examination should be made. If symptoms or signs are elicited, or if any symptoms develop, a bronchoscopic or oesophagoscopic examination should be made. As a rule this can be done without anathesia and in competent hands is practically without danger.

Case No. 2—R. K., one year old. Referred with a diagnosis of possible foreign body in the lung. History of choking on a match four months ago with marked cyanosis. Examination disclosed greatly undernourished child who was weak and quite toxic. Seems too sick to cry. Rectal temperature 104. The pulse was uncountable, weak and thready. Physical examination discloses dullness over lower two-thirds of right lung associated with tubular breathing and diminished chest expansion. "Asthmatoid wheeze" of Jackson not present and the X-ray was negative except for shadow in the region of the lower lobe of the right lung. A bronchoscopic examination was made without anesthesia. The right bronchus was found to be filled with pus and the mucous membrane was greatly swollen. Foul smelling pus was aspirated by a suction tube. No foreign body was found and as the child's condition was quite bad, prolonged search was not made. Diagnosis: Lung abscess.

The child was taken home the next day against advice. Since he lived in a somewhat distant town nothing further was heard of him for two weeks. The father then reported that the patient had died one week previously. Permission was obtained to exhume the body and do an autopsy. The findings were of great interest. An abscess cavity containing the foreign body which proved to be the head of a blade of timothy was found in the right lower lobe. This cavity was situated two and two-thirds inches from the bifurcation of the trachea in the lower right lobe well anterior. It communicated with the bronchial tree through a long irregular tortuous fistulous tract. The cavity was in such a location and the fistulous tract was so tortuous that had one absolutely known that the foreign body was present, it would have been an impossible problem to remove it. This foreign body most certainly remained with-

in the right bronchus for a long period of time before it eventually eroded its way through the bronchial wall into the lung tissue. From the point of entrance into the pulmonary tissue the movement of the body was gradually downward. Since the tiny points of the timothy head were pointed upward the only motion could be a downward one and the possibility of coughing it up was a very remote one.

A diagnosis of bronchitis was made by the physician who was first called to attend this child in spite of the fact there was a history of sudden onset with choking and cyanosis in a perfectly normal healthy child. Had the physician thought that the symptoms might be due to the inspiration of a foreign body into the lung an early broncho-

scopic examination could have been done and the chances are another life might have been saved. Surely the foreign body must have remained free within the right bronchus for several weeks before it finally eroded its way into the lung tissue.

If an examination had been made during this time the foreign body would have been found free within the right bronchus and its removal would have been easy. The illustration will clearly show the inaccessible position of the timothy head and the slight chance of spontaneous expulsion. The specimen also demonstrates why a foreign body is more likely to find its way into the right bronchus than into the left. The right bronchus comes off at a much less acute angle than the left and is slightly larger. Thus any intruder is more likely to lodge on the right side. Had not the presence of a foreign body been suspected by the physician who referred the case to us one more child would have joined the many who have died of unsuspected foreign body of the lung.

Case No. III. R. C., 4 years old. Child has been unable to eat anything but fluids for about a week. At times has choking spells becoming cyanotic and quite dyspnoeic. History of swallowing a quarter two months ago. The day following the accident he was taken to a physician who passed a stomach tube. The mother was assured that if the coin were stuck in the esophagus it had now been pushed into the stomach and that it would be passed in a few days.

As the quarter was not found in the stools and since the boy had no further symptoms at this time except slight difficulty in swallowing, it was decided that he had probably not swallowed the coin at all. However, he gradually began to lose weight and became quite fretful. Several weeks later he was taken to another physician who assured the mother that if he had really swallowed the quarter it had long since passed. To prove the fact he also blindly inserted a stomach tube which met with no resistance. Later, the mother insisted upon an X-ray examination. The shadow of a coin was found in the region of the middle third of the esophagus. He was now referred to us for an esophagoscopy. Upon examination a mass of foul smelling granulations was encountered upon the posterior wall of the middle third of the esophagus. At this time all efforts to locate the coin failed. It was now decided to wait until all reaction had subsided and then to attempt its removal under the guidance of the fluoroscope. Six days later he was again operated upon. Through the aid of our roentgenologist, Dr. Charles Clovis, who guided us by means of the fluoroscope the upper edge of the coin was located with a probe. It was now dislodged forward through a bloody mass of granulation until the edge could be seen. Suitable forceps were used to grasp and remove it. When the foreign body was dislodged at least an

ounce of pus escaped from behind it. This fact leads us to believe that the coin had gradually eroded its way through the wall of the esophagus, nature throwing up protected from infection. Had nature not been so kind there is very little doubt but that a mediastinal infection would have developed and a fatal termination would have ensued. The patient was discharged from the hospital two days later and his recovery was rapid. It was feared that a stricture of the esophagus might result. It has been several years since the accident and the patient is still without symptoms. What does this case teach us,

First: With a history of swallowing a foreign body which is thought to have lodged within the esophagus all of the methods of examination at our command should be utilized. Second: The blind passage of a stomach tube or other instrument fails to prove that a foreign body is not present in the esophagus. Third: Foreign substances may remain within the esophagus for a long period of time without marked symptoms. Fourth: The fluoroscope when used by a skilled roentgenologist may prove a very valuable aid in the removal of an opaque body.

Case No. IV—K. J., female, age 40 years. Complains of pain in chest, mid line, below sternum. Onset, six days ago. While eating soup patient choked and thought that she had swallowed something sharp. Came to hospital at once and was X-rayed but report was negative. Patient unable to swallow anything but liquids. In spite of the difficulty in swallowing and in spite of the pain, she was assured that nothing was in the throat. A diagnosis of hysteria was made. One of the physicians in charge of the case insisted that an esophagoscopy be done. Upon examination by means of the seophageoscope a large piece of bone was located near the cardia tightly imbedded in a foul smelling mass of ulcerated mucous membrane. All attempts to push it downward failed and it could not be dislodged upward by manipulation. Since non-removal would have been fatal, strong traction was used and the foreign body was forcibly pulled upward and removed. Fortunately there was little reaction and the patient promptly recovered. This case shows us that a roentgenogram may be quite misleading. Failure to have a direct examination done changes a relatively simple case to a very difficult one, for had this case been examined early before there was much swelling, the mechanical problem would have been much simpler.

We now wish to call your attention to the dangers attendant on the blind passage of a stomach tube in suspected foreign body in the esophagus. While it is true that some objects may be blindly forced downward into the stomach by a stomach tube with little danger, it is true that many lives have been lost through this procedure. The history as to the nature of the swallowed foreign body is frequently undependable. The patient states that he swallowed a coin or other blunt edged object, while the examination disclosed a piece of glass, sharp bone or other pointed substance. In case the edges of the intruder prove to be smooth and blunt the passage of the stomach tube may be without danger to life, but if the edges be sharp or be it a pointed object the stomach tube is many times an instrument of death and the well meaning physician the executioner.

We recall one case in which the child was supposed to have swallowed a marble. The stomach tube was called into play. At the autopsy it was found that she had swallowed an open safety pin, the point of which had been forced through the esophageal will in many places.

In our opinion it is never justifiable to pass blindly a stomach tube in the attempt to dislodge a foreign body unless no other means of examination is possible.

How are we to make an early diagnosis of foreign body? Probably the most valuable aid is the definite history of sudden choking with or without cyanosis in a healthy child who was normally playing. Often there are practically no symptoms or signs. If the intruder be in the esophagus the patient may or may not have difficulty in swallowing. Dyspnea may or may not be present. Pain if present is a valuable aid. If the substance be in the lung and

if it be of such a shape as to be non-obstructive frequently no symptoms or signs are present. If it be obstructive in type, the only symptoms may be slight dyspnea with or without cough. Physical examination may show decreased expansion of the chest, associated with a hyper-resonance or dulness upon the affected side. We have found that cough is not a very dependable sign unless the foreign body be freely movable within the bronchial tree. The "Asthmatoid Wheeze" of Jackson is a very valuable sign, if present. If the foreign body is opaque to the Rontgen Ray an X-ray picture is of extreme value. Many times when a non-opaque foreign body is present in the esophagus very valuable information may be obtained.

Our procedure is to place the patient in an upright position in front of the fluoroscope. A gelatine capsule filled with bismuth is now given the patient and he is requested to swallow it. The roentgenologist can determine if it passes freely or whether it hesitates or (indeed) becomes lodged on its way to the stomach. In this way we many times determine the exact location of a nonopaque foreign substance. In the early stage the X-ray is of very little aid in the diagnosis of a non-opaque foreign body in the lung. However, if the body obstruct the main bronchus or any of its branches, later, secretions begin to form in the portion of the bronchial tree distal to it. We are then able many times to obtain a shadow showing the ramification of the bronchial tree below the point of obstruction. A positive X-ray finding is of value while a negative one is valueless. An X-ray examination should always be done. (Cases I and IV both show us that a poor X-ray plate or improper interpretation may be very misleading and be the cause of the failure to make an accurate diagnosis.

If we have a patient with a suggestive history of having swallowed a foreign body who develops any symptoms which may be due to it, it is our duty to make or have made a direct examination of the lung or esophagus. In skilled hands this procedure is practically without danger. Failure to have an examination made may be the means of sacrificing lives which might be saved. A large number of cases of fatal pneumonia result from failure to consider the possibility of foreign body in the lung.

Idiopathic mediastinitis may be due to foreign body of the esophagus. I hope that this paper may be the means of causing you to ponder and think that possibly your patient whose case you have been unable to diagnose, may have inspired or swallowed a foreign body.

DISCUSSION

Dr. S. S. GALE, Roanoke, Va.:

I want to say just one word. I was very much interested in the paper and in the subject of foreign bodies. It seems to me one of the important things in this paper is the point of making an early diagnosis. Usually these cases fall into the hands of a general practitioner first, and what I want to impress is the importance of an early X-ray. I remember Dr. Hoge stated in his paper that X-ray of the chest in non-opaque foreign bodies is not of much assistance. My impression was that X-ray of the chest in non-opaque foreign bodies, when the bronchus is occluded, is of very great assistance. I can not tell you just the signs, because I am not a roentgenologist; but it seems to me that the destiny of the two sides would be different and that the location of the non-opaque foreign body is made from density. It seems to me of the utmost importance, then, that all chest conditions, especially in children, should be taken to a roentgenologist as soon as possible. Another thing that is very important is that the roentgenologist should have had some special training along the line of interpreting foreign bodies in the lung. Another important thing Dr. Hoge stresses is the use of bronchoscopy.

I want to relate just briefly a most interesting case of foreign body in the esophagus. This was a woman who had a "gum boil" and took a safety razor blade and attempted to open the "gum boil" with the safety razor blade. In some way it got away from her, and she swallowed it. She

was brought to the hospital and fluoroscoped, and the doctor located the blade somewhere in this neighborhood with the fluoroscope. (When I was called in consultation he gave me this history.) He decided that he could not get it from above, as he was not skilled in esophagoscopy; so he attempted to push this safety razor blade down into the stomach by the use of the stomach tube and later by means of a sponge, doing a gastrotomy. He attached a sponge to a cord and attempted to push the blade down into the stomach, then closed the stomach. He went in from here and removed the blade. That patient lived some nine or ten days. She developed a mediastinal abscess, which ruptured and she died of sepsis. It was a most remarkable case.

Dr. HOGE, closing the discussion:

I think probably Dr. Gale misunderstood my point in regard to the value of the X-ray in non-opaque foreign body. It is of no value unless the body is obstructive, causing obstruction in the bronchus.

I do not agree with the discusser as to the method of removal of the razor blade. I think that patient should have been sent to some place where esophagoscopy could have been used, as it would have been very much safer to remove it in that way.

Dr. GALE: I did not mean that esophagoscopy should not have been used but that if the surgeon was going to operate he should have operated above in the beginning.

THE CORNEA*

By EDWARD B. HECKEL, M. D.
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FOR the privilege of appearing before such a progressive, wide-awake constituent society of the American Medical Association I am sincerely grateful.

My subject, the Cornea, is a broad comprehensive title. I trust, however, that I shall not weary you with well known details. It shall be my purpose to deal with generalities, they may not be glittering, but nevertheless they will be generalities; rather than with particular well beaten paths, in fact they may be considered by-ways yet important enough to be highways. I may be guilty of repeating well known truths and if so I pray your generous indulgence, for after all we learn only by constant repetition.

It is scarcely necessary to remind you that a clear transparent well formed cornea is absolutely essential, other conditions being equal, for clear normal vision. Because the word cornea is derived from the Latin cornu, a horn, many think the cornea is a perfectly stiff tissue and owes its convexity to this quality, but, as a matter of fact, its convex shape is due to the normal intraocular pressure. Remove this pressure and the cornea collapses and assumes an inverted curvature. It is generally supposed that the curvature of the cornea is spherical. As a matter of fact it is elliptical but not a regular ellipse of revolution. A perfect ellipse of revolution has two axes, a major and a minor one, but the normal curvature of the cornea has a major and two minor axes, and therefore is a triaxial ellipse. When the difference in the minor axes is sufficient, it constitutes astigmatism. Astigmatism is a word to be conjured with; it is used by everybody but its meaning understood by few. It sounds well to the laity and is used on all occasions, and in a most unsatisfactory manner. The human mind seems to demand a handle for everything and as long as the handle is familiar and commonly used its real meaning matters but little. If a child is brought to the opthalmologist and the parent is told that the child has a parenchymatous keratitis,

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the mother gapes and stares and replies: "My! what is that?" and if this same mother has a child ill and the illness is diagnosed as scarlet fever, she is satisfied, not because she knows any more about scarlet fever than she does about parenchymatous keratitis, but the term is familiar. Ophthalmological writers seem to refrain from defining astigmatism and while the supposition is that we all know what it is, it seems difficult to tell others. Most patients on consulting an ophthalmologist will ask almost immediately, "Have I any astigmatism?" and whether answered "yes" or "no," they seem perfectly satisfied, because they are familiar with the term. The word itself derived from the Greek, literally means from a point, but which is far from defining what it really is. If you will imagine a plane of light instead of a line of light then we may define astigmatism as an eye in which the focal points of no two refractive planes coincide.

The layers of the cornea are easily remembered if we recognize the five layers as being made up of two pairs and one, the two thelium layers, the one on the outside, as epithelium and the one on the inside as endothelium; two elastic membranes, one external and one internal, the outer one known as Bowman's membrane and the inner one as Descemet's membrane; while the proper substance of the cornea lies between two pairs and makes up the greater bulk of the cornea and some times spoken of in classical terms as the *substantia propia*. After incised wounds of the cornea these two elastic membranes never unite.

As the normal cornea has no blood vessels it does not manifest the usual signs of an inflammatory process. The first physical evidence of a keratitis is a loss of transparency, local and limited, or general; and if local it usually resolves itself as an ulcer or superficial localized necrosis.

The commonest injury is that produced by a foreign body or some small particle imbedded in the corneal tissue. Although this is a simple thing in itself, it may lead to grave results and even the loss of an eyeball.

Small particles on the cornea are best seen by so-called oblique illumination or retro-illumination, by applying a beam of light in a dark room directed not on the cornea itself but from the side in such a manner that the light is reflected from behind the cornea, in this way small particles become clearly visible which otherwise, and especially by general illumination may not be seen at all.

Infection is the thing to be avoided in all corneal injuries, so that all corneal injuries must be approached not only with a clean heart but with clean hands also. All solutions such as cocaine, atropine, etc., should be made up with a solution of Hg. cyanide 1:3000 instead of distilled water.

In infected corneae not only the eye itself should be kept as clean as possible but the patient's mouth and teeth deserve attention Our patients are provided with a tooth brush and a small box of sodium bicarbonate with which the teeth are to be scrubbed three times daily. We believe that the sodium bicarbonate is the best form of dentrifice. The mouth secretions are normally alkaline but most mouths are acid, therefore an alkaline wash such as sodium bicarbonate not only cleanses but alkalinizes the teeth and mouth.

In all penetrating wounds of the eye ball our patients are immediately given 1500 units of tetanus antitoxin and I dare say that this foreign protein prevents the occurrence of sympathetic uveitis.

In extensive ulceration and the formation of hypopyon the introduction into the body of a foreign protein is most beneficial and in our experience the diphtheria antitoxin seems best.

In simple clean cut incised wounds of the cornea with iris prolapse the instillation of eserine is very helpful in reducing the prolapse or in producing a clean cut iridectomy after excision of the iris prolapse.

Many years ago we observed that it is impossible to dilate the pupil with an open or leaking anterior chamber, because under these conditions the external intra-ocular pressure of the iris is removed and an engorgement or congestion of the vessels of

the iris follows, which causes the iris to spread and hence the pupil to contract; on the other hand the action of eserine under these conditions is accelerated.

In 1906 at a meeting of the medical society of the state of Pennsylvania it was my privilege to promulgate this method of instilling eserine as follows: The eye is cocainized in the usual way and then eserine sulphate gr. I ad drs. iv instilled three times at intervals of two minutes, then, if the iris prolapse is very recent (within a few hours) an attempt may be made to reduce the prolapse by placing into the wound a small flat horn or metal spatula and by giving it a gentle twist, the iris may suddenly slip into the anterior chamber. If a longer time has elapsed since the injury and prolapse, then it is not possible to do this. Then the iris should be caught by an iris forcep and slight, gentle traction, made and the prolapsed part excised close to the cornea with small sharp scissors and then a small spatula introduced into the corneal wound with a gentle twist so as to release the iris and permit it to return to the anterior chamber which will result in a nice clean well formed key hole iridectomy. After twelve hours atropine is instilled for a few days. This was published in the *Pennsylvania Medical Journal* in 1907 and has been re-promulgated several times since then by others thus furnishing further proof of the common origin and unity of the human race.

In penetrating wounds of the cornea or the eye ball made by a supposed flying body our motto should be "festina lente, make haste slowly." We have painted on the wall of our eye clinic in the Allegheny General Hospital the following:

"NEVER GUESS WHEN IT IS POSSIBLE TO KNOW."

In all suspected cases of foreign body within the eye ball they should never be tampered with until an X-ray has been made and if a foreign body is present, it should be let alone until a localization is made, and a careful history taken of the case, as to what the patient was doing, the position he was in, and the kind of metal he was using.

The use of a magnet as a diagnostic instrument is only mentioned to be condemned. In many cases grave harm has resulted from such practice. It requires some intelligence and good judgment to use a magnet successfully. An eye with a suspected foreign body of steel or iron should never be approached with an electro-magnet with the current turned on. An exact localization is absolutely essential, after that the tip of the magnet should be well placed as near the foreign body as possible before the order is given to turn on the current. The use of a magnet for the removal of an intra-ocular foreign body is a serious procedure and should be approached with care and reverence. The patient should be given all the pre-operative care of a patient about to be operated for cataract, and placed in a recumbent position and finally, we must always remember that an eye with an intra-ocular foreign body is, potentially a lost eye.

Superficial inflammation with the formation of blood vessels are always accompanied by more or less of a conjunctivitis and conjunctival secretion and are usually the result of systemic and nutritional disturbances and one of them, *e. g.* Herpes corneae is ushered in with chills and fever.

The treatment should be general and local. The local use of atropine is absolutely essential as atropine not only dilates the pupil and paralyzes the ciliary muscle but it has a very beneficial influence upon the circulation of the cornea, which is always slow as it has no blood vessels. The use of one or two drops of atropine gr. I ad drs, II, after the removal of a foreign body which had to be picked out, is most beneficial as it allays all irritation. The slight inconvenience from a partly dilated pupil is nothing compared with the comfort experienced as a result of the atropine. The secretions of the eye may be watery or muco-purulent which are controlled and the conjunctival sac sterilized more or less by silver nitrate. Silver nitrate is one of our most valuable drugs but must be used with care for it is not always what we use but how we use it, that counts, and this is especially true of silver nitrate. In the first

place once in twenty-four hours is quite frequently enough. The strength should be 1:1000 or 1:500, or at times 1:250 or in round numbers, 1/2 gr. to one ounce, or 1 gr. to one ounce, or 2 grs. to one ounce; stronger solutions should be used with great care, if ever.

In the so-called phlyctenular keratitis not only teeth and tonsils should receive close study, but diet, fresh air and sunshine are also important.

It should also be remembered that a keratitis pure and simple practically never exists, the contiguous structures always participate. A simple localized corneal necrosis with the rest of the cornea clear and transparent may give rise to an hypopyon, a deposit of leukocytes and lymph cells with some iris pigment, in the anterior chamber as the result of the irritating effect of the toxins liberated by the ulcer.

To prevent scarring of the cornea after ulcer, abrasion, etc., there is nothing like the persistent use of atropine and dionin. We use it, atropine gr. I, dionin grs. X, Sol. Hg. cyanide 1:30000 drs. III twice daily, sometimes for weeks or until the eye becomes perfectly pale and quiet then we omit the atropine but continue the dionin grs. XV ad drs. IV twice daily, not only for weeks but months or until the last vestige of the scar has disappeared. It is remarkable how the scars will clear under the persistent use of dionin. Of course it goes without saying that if the corneal tissue has been destroyed through and down to the posterior elastic membrane there will be more or less permanent opacity, but I do want to emphasize the value of the persistent use of dionin. We have used it for more than a year and even two years, with marked benefit, twice daily except Sundays, as an interruption in its use seems to enhance its action.

Burns of the cornea, especially metal splash burns are always serious and a very guarded prognosis should be given, as it is impossible to tell for some days how deeply the tissue has been destroyed by the heat coagulation and especially is this true of burns at the limbus, for it is from this part of the cornea that it is nourished. What at first sight appears like a small and rather innocent metal splash burn may result in a general slough of the cornea and an eventual loss, not only of vision, but of the eye ball.

We rarely see chemical burns early enough to use any agent to neutralize the caustic effects of the foreign substance and if we did it would have to be done with considerable care and circumspection. Normal salt solution used copiously and abundantly is quite efficient. The prognosis should always be very guarded, as the most innocent appearing condition, after some days, may prove the most disastrous.

It is with some feeling of misgiving that I mention interstitial keratitis. Our colleagues the syphiologists have taken charge of this and proved conclusively, at least to themselves, that the newer intra-venous methods are superior to any others.

May I remind you that of all forms of keratitis, the interstitial type is less limited to the cornea than any other form. Not only the immediate contigous structures participate, but the entire eye ball, there is general uveitis, choroiditis and retinitis, with involvement of the optic nerve itself, and often a fluid vitreous, so that a clear cornea is not the final goal in the case and treatment of the disease. What may produce a clear cornea within a comparatively short time may be so destructive to the finer nerve elements of the retina and optic nerve as to interfere very much with the proper functioning of the eye as a means of vision.

We have tried out the newer methods and have gone back to mercury because we got better final results. And notwithstanding others to the contrary, we give mercury in these cases by the mouth as mercury bichloride dissolved in water with a bit of sodium chlorid, and in doses varying from 1/32 to 1/8 gr. three times daily, without any bad effect upon the kidneys. These patients always increase in weight and general well being. Our conclusions are based upon many cases from private practice and many of them after an observation of from fifteen to twenty years.

Permit me again to emphasize the fact

that an interstitial keratitis is a serious condition and that it is not limited to the cornea but that the entire eye ball participates.

Nowhere in the whole realm of medicine is the power of observation of so much value as in ophthalmology. In many conditions it is possible not only to make a diagnosis but even to construct a clinical history from the results of observation alone, *i. e.* from what we are able to see and observe, therefore learn to use this divine gift, for after all eternal vigilance is the price of success.

REPORT OF TWO CASES OF HYDATIFORM MOLE*

By L. D. HOWARD, *M. D.*
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WHEN we consider the fact that approximately 50 per cent of the cases of chorio-epithelioma malignum are preceded by hydatiform mole and that hydatiform mole gives rise to chorio-epithelioma in about 9 per cent of the cases of hydatid mole, it is very gratifying indeed, to realize that hydatiform mole is a comparatively rare disease. Madam Bovin found that it existed in one to 20,000 cases; Williams saw three cases in five years of his extensive obstetrical practice and DeLee had four cases in 15,000 patients who came under his observation.

Hydatiform mole may develop any time between the induction of the menstrual function and menopause; in fact, one case of vesicular mole was reported by Mohtor, in a girl nine years old, yet the vast majority of cases occur between the age of 35 and 50 years. It is found more frequently in women who have had children. Other diseases, habits, climate, etc., seem to have no influence as causative factors.

Many noted investigators, however, particularly in years gone by, have attributed its development to endometritis declaring, after considerable investigation and experience in addition to exposing the uterus in dogs and injuring the endometrium and placenta by pressure upon same, that the developmental defect was due to the irritation of diseased endometrium, interfering with proper blood supply in the chorion.

H. Hinselmann says that hydatid moles are due to developmental anomalies in the blood vessels of the chorion in contradistinction to the old theory that assumed they were due to disease of the decidya or ovary. He further states, however, that we do not know what is responsible for the delay in the proper formation of the blood vessels. Our conclusion therefore, based upon the findings of these and many other investigators is, that the real etiological factor is no better understood today than it was many, many years ago.

Hydatid mole when examined macroscopically, resembles a large bunch of Catawba grapes. The cysts vary in size from a pin's head to that of a hen's egg, the latter is rare—more commonly we see cysts the size of a pea up to those the size of a hazel nut. These cysts projecting, as they do, from a connective tissue stem form a soft mass—oftimes, part of the structure may resemble degenerated placental tissue. Occasionally there may be a fairly large portion of the placenta. If the mole forms prior to the placenta there is rarely any placental tissue present. Histologically, to quote from Payne, we find that the fetal placenta is developed from the chorion and through the chronionic villi is derived the nourishment for the fetal organs. These villi are finger-like projections covered on the surface with a layer of syncytial cells, next beneath the Langhans, and then the stroma containing a small number of capillaries.

As the placenta develops, the villi show

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rapid growth and great erosive power by by which they are able to penetrate through the uterine mucosa into the underlying venous sinuses, where, by selective absorption, they gain nourishment for themselves and for the placenta.

When conditions are normal and the fetus about mature, these villi withdraw from their intramural position; the outer layer of syncytial cells covering the villi has long since undergone atrophy; the layer beneath Langhan's cells also undergoes degeneration and thus the attachment between the mother and fetus is loosened in preparation of birth.

But this does not always happen for some of the villa may persist in intimate contact with the maternal tissues and the maternal blood and many continue to grow in situ after the normal period if gestation has been attained; continuing to be nourished by the maternal blood and to absorb fluid, they may hypertrophy and become distended by an edematous mucoid infiltration so as to form a mass or series of grape-like vesicles of varying size, distending the uterus to even as great an extent as a full term fetus.

If however, the above conditions remain within normal limits the result is nothing more than hydatiform mole. On the other hand the villous growth may proceed beyond the normal limits; the venous sinuses may become filled with an active proliferation of the chorionic elements; the epithelial cells may be swept away by the blood current and deposited in the capillaries of the vagina, lungs, brain and other organs and thus we have a transition from the benign mole to the malignant chorio-epithelioma.

Hydatiform mole might invade the uterine tissue by simply pushing the normal tissue aside and while not necessarily becoming malignant, might, by entering the peritoneal cavity induce sepsis or a fatal hemorrhage. Cottadorda says that hydatiform moles and chorio-epitheliomata are accompanied by bilateral lutein cysts of the ovaries in 59 out of 100 cases of mole, and 94 out of 100 cases of chorio-epithelioma.

According to Pouget, lutein cysts are the results of internal secretion of the ovary, caused by the hyperintoxication accompanying hydatiform mole. Some writers declare that although they may in some instance complicate the mole they usually subside with its disappearance. Should they not, however, surgical intervention is demanded, as they may be regarded as an indication of probable evolution into chorio-epithelioma. When a patient comes under observation with the history of amenorrhea accompanied by enlargement of uterus we naturally suspect pregnancy, especially, when it occurs in a woman who has been previously regular. However, if the enlargement of the uterus be out of proportion to the term of pregnancy and be accompanied by irregular and often profuse bleeding we should make a thorough investigation for the presence of hydatiform mole.

There may be anemia, as a result of prolonged bleeding, with all its attendant symptoms and signs, such as general weakness, rapid heart. lack of appetite, pallor, etc. Particularly, should we be suspicious of mole if the fetal body cannot be outlined and later, if the fetal heart sounds are not heart and fetal movements not detected. The diagnosis is easy when there is an expulsion of one or more vesicles. This, however, does not, as a rule, occur until the mass is ready to be expelled.

The treatment of hydatiform mole is very important and while it is comparatively simple, there is a well marked difference of opinion regarding the use of the curet. All leading observers agree that just as soon as the diagnosis is made the uterus should be emptied, dilatation being accomplished very carefully, preferably by means of gauze tampons, guarding against hemorrhage in every way possible as in many instances, the patient cannot well lose any more blood, because of previous anemia. Edgar advises against the curet because of the danger of puncturing the uterine wall, it being impossible to tell how far the mole may have penetrated the musculature. Findley and Frey and many others have had no bad results in the careful use of the curet. All agree that insofar as possible, all tissue

should be removed in order to prevent sepsis or beginning chrio-epithelioma. Hemorrhage is then controlled as usual, packing, ergot, ice pack, etc.

The patient is kept under careful observation for ten days and then ordered to report for monthly examination for 2 years.

Case No. 1.—Mrs. E. C., 27, white, American. Patient had ordinary diseases common to childhood. Menstruation began at 15, was irregular and painful, lasting 5 to 14 days. Has never had any serious illness since she began menstruating; was married at 24 and became pregnant in 9 months, having a miscarriage at 3 months. Following miscarriage, menstruation was regular occurring last about March 1, 1926. In six weeks had nausea and vomiting and all early signs of pregnancy. April 29, patient had a slight menstrual flow and this continued more or less every day until August 6, during which time she had more or less pelvic pain, and headache and was extremely nervous.

When first seen, which was August 6, 1927, patient was bleeding freely and had temperature of 103. She was ordered to hospital immediately. Prior to being admitted to operating room she expelled from the uterus a mass twice the size of an adult male fist and covered with blood; upon closer inspection, the mass was seen to consist of dozens of cysts varying in size from a small pea to that of a hazel nut, resembling a large bunch of Catawba grapes, the cysts were attached to pedicles of stroma which shot out of a central stem. In addition to cysts and stroma, there was some true placental tissue; all of tissue was fresh and indicated that detachment was quite recent. Microscopic examination revealed nothing unusual, other than a true hydatid mole; no evidence of malignancy.

Treatment under gas anesthesia. Uterus was carefully explored and no remnants of mole found; a hot saline douche was given and the uterus carefully packed. Ice was then applied to the pelvis. Tonic doses of ergot were administered and pack removed in 24 hours. There was an immediate drop in temperature and patient made an uninterrupted recovery. She was last seen June 17, 1927, and found to be in an apparently normal physical condition. Menstruation began one month following expulsion of mole and has been regular since that time.

Case No. 2.—Mrs. R. S., white, Syrian, 48 years of age, had ordinary diseases common to childhood. Menstruation began at 14 years, was always regular, lasting four days and flow was normal in quantity and character. She has not had any serious illness, has had eleven children, all of whom are now living.

The first child was born when she was 16 years old and all births were normal, convalescence in each case being uncomplicated. The last child was born seven years ago; had one miscarriage when she was 35 years old, this occurring at 6 weeks with good recovery.

The last menstruation began September 2, 1926, and was uneventful; she failed to menstruate the following month and at six weeks nausea and vomiting began. This, however, was never severe and lasted six weeks. Pregnancy seemed to progress as usual, there was enlargement of breasts and all attendant symptoms of early pregnancy.

The patient noticed, however, that there was no enlargement of the lower abdomen following the fourth month, at no time did she have any discharge of blood from the uterus, pain or any other untoward signs or symptoms until April 10, 1927, when she began having intermittent uterine pain, which gradually became more frequent and more severe, until she expelled a mass which was one and a half times the size of an adult male fist, was covered by grape-like cysts varying in size from a wheat seed to a large Catawba grape, and otherwise having all the characteristics of a hydatid mole; although much paler than the specimen in the first case. There was very little bleeding from uterus.

Specimen was sent to University of West Virginia laboratory for further examination and Dr. C. C. Fenton sent the following report: "The specimen grossly shows all the characteristics of a typical hydatid

mole. Under examination by means of the paraffin method, the specimen showed very much the same characteristics as under the frozen section. The presence of papillary processes resembling typical chorionic villi of the placenta were noted. The fibrous tissue core of the villi was edematous. Typical syncytial cells were noted. The growth of the cells appeared to be limited to the papillary processes and did not seem to invade the deeper tissues. There were some hemorrhagic areas in the section. Whether this growth will give rise to a chorio-epithelioma is difficult to state." Treatment: rest in bed for ten days, ice to pelvis, tonic doses of ergot. Patient had an uninterrupted convalescence and has had two normal menstrual periods since and is apparently enjoying good health.

These two cases were interesting to me because of the following points: Both expelled the mole at six months; the first had never been pregnant and was 26; the second was the mother of eleven children and was 48; the first had irregular bleeding and the second had none; the first had a marked hemorrhage at the time of expulsion; the second had none; the first ran a very high fever when mole passed, the second had none; the specimen of the first contained definite placental tissue and the second very littl or none.

It is quite probable that many of our cases of hydatid mole may be overlooked, especially in those cases where there is a miscarriage at three to four months and the mole is not very large. Considering its tendency to become malignant it behooves us to be constantly on the alert, lest, it may be missed in its early stage only to be discovered when the situation is most difficult to handle.

FACIAL TYPES AND FACIAL ASYMMETRY *

By H. V. KING, M. D.
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THIS important subject should really have more time than I have to give it, also more research than I have been able to make. However, I shall try to mention some of the more important points in this connection.

The fact of a more or less universal facial asymetry is quite well known. Many popular and more or less sensational articles have appeared regarding it, mostly in the Sunday magazine sections. The photographer selects the better side to face the camera. Apparent vertical asymmetries are very common, *i. e.*, the form in which one eye and ear, usually the left, are higher than the opposite. Some of the differences are only two or three millimeters; others are plainly noticeable to the man on the street.

Liebreich, after an investigation of many thousand heads of different periods and nationalities, came to the conclusion that facial asymmetry is a definite human characteristic, that it is found among all races and that it has always existed.

Lombroso and Nordau classed asymetry as one of the stigmata of degeneracy and the outward sign of an ill-balanced intellect. Surely if this were true, then humanity has always been degenerate, for Liebreich cites ancient skulls and mummies far into prehistoric times. King Gustavus III of Sweden had an asymmetrical face which served as the inspiration for a novel, "The King with Two Faces" (Maud Coleridge). Ramases II was another illustrious possessor of an uneven skull.

The usual form of variance is a flattening of the left side of the face, chiefly noted in the malar bone, and followed in order of extent of displacement by the maxilla and mandible. This flattering and displacement upward and dorsal results in orbital dis-

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tortion and causes the left external angle to be higher than the right.

Liebreich concludes that asymmetry has its origin in the position of the fetus in utero, the most common being with the head down, pillowed on the left cheek. Granted this hypothesis, asymmetry becomes a solely human characteristic and one of the penalties for the upright position. It explains the proportion in which asymmetry exists, which must be about 85 per cent. Those who have investigated most vary their estimates from 97 to 70 per cent.

Other more diversified types of facial abnormalities are explained by later authors as due to habits of sleeping on one side and pillowing the head in certain positions.

Here enters the question of a possible defect in calcium balance. It is easy to conceive a constant position working on an unusually soft bony structure to attain some of these deformities.

The value to us of noting and studying this factor should be evident. Merely consider the proposition that the facial contour of one individual may be such as to make an immediate good impression, while that of another may tend to repel. Further we must realize that atypical and asymmetrical faces are concomitant with certain untoward anatomical states.

The facial bones and those cranial bones forming the more superficial nasal sinuses are the danger area in any skull asymmetry or abnormal type. The brain case, *per se*, may be compressed and malformed to an extreme with no apparent effect on the general health. I make this statement advisedly after an examination of about 300 Indian heads. Opposed to this the face must be kept normal or trouble may ensue.

Passing to a practical application, we must meet the demands of the asymmetrical face when fitting glasses. Where the left eye is higher than the right there is a right hyperphoria. This may be considered as physiological, inasmuch as it has existed ever since the fixation was developed. However, considering the weakness of the superior and inferior recti, it is doubtful to me if the balance is maintained without a constant nerve stimulus, which may be exhausting. We should at least do nothing to aggravate the existing condition, which according to my own measurements and estimates is about one centrad of hyperphoria for every four or five millimeters of difference in eye level. The lenses should be decentered to a vertical coincidence with the pupillary center or the frame must be adjusted. It is my custom to vary the adjustment to the higher eye. If the patient requires a plus lens slight differences may remain uncorrected as the prismatic effect of the lens will be to allow vertical balance without an exact centration. Minus fittings must be fully corrected upward as the prismatic effect is to aggravate the existing imbalance. Lateral decentrations or adjustments are sometimes needed but usually to accommodate a traumatic nasal deformity.

In the nose it is usual to find a deflected septum but not invariably, especially in broad faces. The septum is surely more often to the left than to the right. Of my last twenty operative antra thirteen were left and seven were rights. My impression is the same proportion holds of the previous cases. You all know the possibilities for trouble inherent in a septal deformity so I shall not tire you with detail.

I am not familiar with any constant feature of the throat in these cases. However I have one case in which the styloid process of the temporal bone thrust forward and downward enough to interfere with tonsillectomy on the left side. In another case I was called by a general practitioner to remove a sharp object found by palpation in an infant's throat. After assuring myself that the distinctly felt body was the styloid process, I advised waiting and no trouble ensued. This too was on the left side.

I know of no way in which any significant ear conditions can be associated with asymetry. A careful analysis of a great number of cases would be needed to prove any such connection.

The mouth is a frequent sufferer from asymmetry. Its most prominent manifestation here is that of malocclusion. This leads on from the malocclusion as a base to ir-

regular dentition and still further facial deformity. My dental friends assure me that an asymmetrical face is very hard to fit with a plate.

It was my intention to cover the subject of facial types but I found it so large that it would be impossible to even sketch it in a short paper.

Corrective measures in these cases are limited. The dentist can do a great deal for his patients in straightening deformed palatal arches, and we should encourage him to do more of this work. A mandible which is markedly lopsided can be benefited surgically but with most of the other incidents of asymetry we are helpless.

Our most fruitful field of service in these is that of prophylaxis. The general practitioner should receive a nucleus of instruction around which he may build a further knowledge. Mothers should be taught that marked and freakish cases are surely preventable. The effect of pillowing and position on the face should be explained, using mothers' clubs and welfare workers as a basis.

In our own efforts we should be guided by good sense. It is not advisable to attempt a change in the sleeping position for a child which assumes that position by reason of an underlying pathology. Such cases easily suggest themselves, as enlarged bronchial glands or enlarged thymus, where the child will sleep on its face.

The previously mentioned factor of rachitis should be investigated and the desired hygienic measures taken. Other efforts at prevention may suggest themselves more readily to those who have more practice among infants.

In conclusion may I say that asymetry is universal; its more striking effects and manifestations are preventable. More effort should be made in the field of prophylaxis.

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ESOPHAGASCOPY WITH REPORT OF CASES

By WAITMAN F. ZINN, M.D., F.A.C.S.
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DURING the past few years great advances have taken place, both in the diagnosis and treatment of medical as well as surgical affections. It is a well recognized fact, moreover, that in order that tretment may attain its greatest achievement, diagnosis must likewise progress equally as well. On this account, newer methods of diagnosis are constantly inaugurated and instruments of precision brought forward to aid in accomplishing this end. This fact is especially well illustrated in the affections of the esophagus. The art and application of esophagoscopy has been so greatly developed during the past ten years, that it has opened an entirely new field in the study of this portion of the alimentary tract. This is largely due to the fact that under skilled hands this method of diagnosis may be applied with a minimum amount of danger and discomfort to the patient. The instrument and technique have been perfected, so that under proper instruction it is no longer difficult to acquire skill in the passage of the esophagoscope.

Up to a comparatively recent date, the passage of bougies and the stomach tube were the only recognized means through which examination of the esophagus could be undertaken. The use of the bougie was recognized not to be without danger. With the advent of the esophagoscope a most important method of examination was brought forth. Direct ocular inspection of the lumen of the esophagus can be practiced, the character of the wall noted, and encroachments in the form of foreign bodies, tumors, or even ulcerations observed. At the same

* Presented at White Sulphur Springs on June 22, 1927, to the West Virginia State Medical Association.

time specimens for pathological examination can be removed.

The esophagoscope was first used for the removal of foreign bodies and later for the diagnosis and treatment of esophageal lesions. Esophagoscopy should be a part of an examination whenever the case presents symptoms referable to the esophagus, and in no instance should an endoscopy be done without an Xray study. I have made a routine at Bronchoscopic Clinic, Mercy Hospital, that all cases have an X-ray report before examination is made. A recent case was brought to the clinic for an esophagoscopy, with history of dysphagia, clinically presenting the picture of malignancy. X-ray examination had not been made and was thought of no importance by the physician accompanying the patient, but on fluoroscopic examination, a large aneurysm was found producing pressure on the esophagus. Seven days later the aneurysm ruptured and had an endoscopy been done, would probably have been blamed, by some, as the cause.

Foreign bodies are frequently found in the esophagus, and some after a long sojourn. Flat smooth surfaced objects may remain for months in the esophagus without giving serious symptoms, while sharp or rough bodies will produce perforation or ulceration with serious results if not promptly removed. The old procedure of using such an instrument as a coin catcher or attempting to dislodge a foreign body by means of passing a bougie should be discouraged. The symptoms vary according to the object and its location in the esophagus. Disease of the esophagus is by no means uncommon and with the present day means of examination, is accurately diagnosed and treated. Cancer is most frequent, comprising about 90 per cent of all esophageal lesions. In the largest proportion of instances it is of the squamous-celled epithelimatous type, though rarely medullary, scirrhus and colloid forms occur. The early symptoms of this affection may exist for a long time before the diagnosis is arrived at and this is usually not made until symptoms of obstruction are manifested. According to Kraus the greatest number of cases of cancer of the esophagus occur in the lower third of the tube; next in number is the middle third and in a smaller proportion in the upper third. The disease is observed more frequently in males (70 to 80 per cent) between the ages of 40 and 60 years. The most constant and distinctive sign is difficulty in swallowing, the patient often being able to point to the exact position at which it is no longer possible for the food to descend further. This sign ordinarily becomes more and more marked as the disease progresses. With the difficulty in deglutition, pain is often experienced and due to dilatation above the obstruction, regurgitation of food often with mucous and blood occurs and occasionally with shreds of tumor. Occasionally serious hemorrhages are experienced. As the disease progresses, anemia, cachexia, loss of weight and enlargement of glands are noted.

Cicatricial stenosis of the esophagus is frequent and with present methods of treatment a great many lives may be saved. The ingestion of caustic alkalies produces ulceration which involves one-half to two-thirds of the lumen, and in this way after the ulceration has healed and a cicatrix has formed, a dilatation above causing a sacculation of the wall and any attempt to pass a bougie blindly will usually find its way to the bottom of the sacculation, being in direct line, and with little effort perforate the wall, producing a mediastinal abscess and fatal termination, whereby these cases may be successfully treated by direct inspec tion without danger to the patient. Imperatori recently has successfully treated pulsion diverticulum of esophagus by means of esophagoscopy. This opens up a new field as it lessens the danger to the patient and less confinement and discomfort. Ulcer of the esophagus may be either simple, syphilitic or tubercular and can best be differentiated by endoscopy and suitable treatment instituted. Papilloma is rare and can only be diagnosed by esophagascopy. A case recently coming under my care presented a number of growths at the cardia which were sufficient to cause obstruction. While papil-

loma is benign I am of the opinion that all multiple growths later become malignant. Further observation of this case will be made.

The following cases illustrate the importance of esophagoscopy:

Case No. 1—Mr. J. N., age 38 years, has had indigestion for about six months, occasionally some difficulty in swallowing. Lost six pounds in weight the past six months, with moderate anemia. Has pain in epigastrium at times. X-ray examination, negative. An attempt to pass stomach tube was met with some obstruction at lower end of esophagus and he was referred for endoscopic examination. Esophagoscopy: About 37 cm from central incisors there was found in the posterior wall an area about one and one-half cm in diameter, which presented the appearance of sloughing due to trauma, no elevation, but there was slight infiltration of surrounding mucosa. Specimen removed revealed carcinoma. This case shows how slight symptoms in reference to esophagus may be for several months before the more severe ones appear.

Case No. 3—Mr. O'N., age 48 years, has had indigestion for several months with cough which seemed to be of reflex nature. Pain at times in deglutition in mid-sternal region. Patient was well developed and always had been very active. General examination was practically negative. Fluoroscopy showed no obstruction in esophagus, heart and great vessels normal. Esophagoscopy: Infiltration of esophageal walls, at aortic stricture mucous membrane dark red with small ulcerative area, no elevation, no narrowing of lumen. Diagnosis of epithelioma was made. Cough became more troublesome and deglutition difficult. X-ray four weeks later showed some obstruction at above location. Eight weeks after endoscopy patient was awakened by strangling sensation and died in a few seconds from profuse hemorrhage. Partial autopsy revealed malignancy with rupture of aorta. The true nature was not determined until esophagascopy was performed. This case did not present the symptoms of malignancy and therefore the diagnosis could only be made by esophagoscopy.

Case No. 22—Mrs. S. B., age 58 years, had complained of general weakness and loss of appetite for several months. Anemia and loss of weight, nausea with occasional vomiting. X-ray of gastro-intestinal tract showed moderate ptosis, no obstruction was noted to meal in esophagus on fluoroscopic examination. Patient was sent to hospital for rest treatment and after few days complained of pain in epigastrium with tendency of solid food to remain in esophagus. Esophagoscopy: There was found 28 cm from incisors a cauliflower mass in posterior wall about two or three cm in diameter. The elevated portion was removed and diagnosis confirmed after pathological examination. The case showed advanced malignancy which would not have been diagnosed at present except by endoscopy. Patient was saved the long treatment which she would otherwise have gotten with same result in end.

Case No. 25—Mrs. M. T., age 34 years, was admitted to Mercy Hospital complaining of difficulty in swallowing which had persisted for several weeks, loss of weight, cachexia, regurgitation of food and pain in epigastrium. X-ray findings showed definite obstruction at cardiac end of esophagus with moderate dilatation above stricture. Esophagoscopy: Upper two-thirds of esophagus normal. At cardiac end there was a large mass in right and posterior wall almost completely obstructing lumen. Mass was nodular, no ulceration, esophagus fixed. Endoscopic diagnosis of carcinoma was made and gastrostomy advised which was refused. Patient died several days later. Autopsy report: hard mass at cardiac end of esophagus, thickening of stomach walls throughout. Section of growth revealed scirrhus carcinoma.

Case No. 4—W. R., age 2 years, swallowed a small quantity of household ammonia three months ago. After acute symptoms had subsided, child experienced no difficulty in swallowing for several weeks, when he began to regurgitate food and lose weight. On admission to hospital he showed

marked emaciation and was unable to swallow. X-ray examination revealed three strictures of esophagus which allowed only small amount of opaque substance to pass. Stricture was dilated by direct method and he rapidly regained his normal weight.

Case No. 5—Miss C, age 55 years, had complained for several weeks of dysphagia, loss of weight and general weakness. Fluoroscopic examination showed some hesitancy of mixture at cardia. Esophagoscopy: Revealed an ulcer near the cardia which resembled a simple ulcer rather than a malignancy. Slight induration of border with grayish exudate, no adhesions and esophagus normal movement. Ulcer was cauterized with 10 per cent silver nitrate. Esophagus two weeks later showed ulcer less pronounced and generally improvement was noticed. Again cauterized with silver nitrate. One month later fluoroscopic examination negative. Esophagoscopy revealed healed ulcer. At present, patient is free from symptoms and has gained weight. There has been little written regarding peptic ulcer of esophagus but I feel with the direct examination of case presenting symptoms referable to upper alimentary tract it will be found that such cases occur frequently and are amenable to treatment.

In conclusion, let me urge that all cases presenting symptoms referable to upper alimentary tract, be given the benefit of an esophagoscopy, as it is only by the co-operation of internist, radiologist and esophagoscopist that we can hope to diagnose cases correctly and institute proper treatment.

ABSTRACTS

Bronchial Pneumonia

Etiologic Factors of Bronchial and Lobar Pneumonia. E. E. Farnsworth, A.B., M.D., *Nebraska State Medical Journal,* Oct. '27.

Bronchial pneumonia is largely a secondary disease, with no characteristic clinical course, no constant pathology, and is not caused by a specific pathogenic organism.

Under two years of age, bronchial pneumonia occurs as a primary disease, is caused by the pneumococcus, resembles lobar pneumonia, and has a very low mortality

Lowered resistance is an important predisposing cause of bronchial pneumonia. Cold and exposure also act as predisposing factors, but the chief predisposing causes are the acute infectious diseases of childhood.

The exciting cause of broncho-pneumonia is always bacteria, chief of which is some form of strepococcus.

Lobar pneumonia is a primary disease, due to a specific infecting organism, namely one of the four groups of the pneumococcus.

Various other pathogenic organisms act as predisposing and complication factors, as do cold, exposure, and certain occupations.

Bacteria other than the pneumococcus may cause pneumonia, but in a very small percentage of cases, except the influenza bacillus which produces a characteristic type of lobar pneumonia, and in a considerable number of cases. —A.A.S.

Malignancy of Larynx

Malignancy of the larynx and esophagus treated by radium emanation. Frank Richard Herriman, *Laryngoscope,* 37:664, September, 1927.

When radium was first applied to malignancy of the larynx and esophagus, the methods were so crude and the results in practically all cases so unsatisfactory, that it was very soon abandoned. Malignant lesions in these structures are so inaccessible and the tissues of which they are composed so quickly rendered radiosensitive that radium has now few advocates as a treatment for disease there located. In the author's clinic the use of radium had been discontinued for several years when he revived the therapy, using a new technique however—the implantation of radium emanation in screened "seeds", directly into the affected tissues.

For laryngeal growths the technique con-

sisted in exposure of the malignant area by direct laryngoscopy or the suspension method—the latter being preferable. For growths situated in the esophagus, a standard esophagoscope was brought into service. When adequate exposure had been obtained, the dimensions of the growth were carefully estimated, and the entire area of malignancy implanted at regularly spaced intervals with the removable platinum radon seeds designed by Joseph Muir of New York. The employment of suspension laryngoscopy makes the placing of radium in the larynx a comparatively simple matter, and with the esophagoscope and the aid of fluoroscopic screen, it can be put in the esophagus with equal facility. The opponents of radium in the treatment of such malignancies have continued to cite the severe reactions and distressing sequelae which follow the use of the crude applicators first employed for work in these peculiarly sensitive structures. When the implantation technique was first instituted in the larynx bare tubes were employed, and the necrosis produced by these unscreened containers caused sloughing of the irradiated tissues, and frequently, grave injury to the adjacent healthy cartilage. In the esophagus the caustic rays were even more dangerous, for sloughing meant lung perforation with almost certainly fatal results.

The design of the seeds used by the author obviated practically all the difficulties encountered under the old methods. Implantation is by far the most accurate way of assuring even an adequate radiation throughout the neoplasm, and as soon as it became possible to implant a screened container, doing away with all danger of necrosis, the radioactive centers could be so placed that every section of the growth would be reached by the therapeutic rays while all caustic action was eliminated. One of the most important features of these seeds is that they are removable, as this does away with the difficulties involved in permitting foreign bodies to remain in the tissues of the upper alimentary canal.

Details of eight cases selected from a larger series are given. All the patients were "hopeless" so far as surgery was concerned, at the time the implantations were undertaken. When this report was made at the New York Academy of Medicine, December 22, 1926, the patients were all alive, although the period which had elapsed since the treatment was begun was insufficient to permit the drawing of any conclusions as to the permanent relief which could be afforded.

The author feels that even if no more than temporary palliation has been secured, this, in itself, is well worth the effort required to apply the treatment, inasmuch as every patient had been doomed to die within a few weeks, when they first came under his care. Most of them had been able to return to their regular occupations, and even those who were still obliged to wear tracheotomy tubes were comfortable and pursuing their ordinary mode of life.

Duodenal Stasis

Bloom and Akens, *Journal of the A. M. A.* October 15, 1927, report two hundred consecutive cases of this condition as demonstrated by roentgen examination. They conclude that the phenomenon is due to a duodenitis secondary to an infection elsewhere in the gastro-intestinal tract, is usually characterized by reverse duodenal peristalsis and often by active regurgitation of the duodenal contents. The most frequent concomitant pathology was in the gall bladder, this organ alone showing involvement in sixty-one instances and in thirty-three additional cases there was a probable gall bladder involvement. Duodenal ulcer alone was noted in twenty-four cases and combined with other lesions in ten additional patients. Uncomplicated chronic appendicitis was seen thirteen times and in conjunction with other abdominal pathology in twenty-eight more cases. Twenty-five per cent of the cases were in the fifth decade of life, although the age range was very wide. There were one hundred and twenty-five females. One hundred and seventy-five complained of abdominal pain of whom

sixty-four located it in the epigastrium and fifty-six complained of it as generalized. Constipation was present in ninety-six instances, vomiting in sixty-five, abdominal distress in fifty-seven, and loss of appetite in fifty-one. Attention is called to the fact that primary duodenitis is very rare, but may be seen in uncinariasis. Fifty of the patients came to operation and the pathology demonstrated then coincided very closely with the preoperative diagnosis. We quote their conclusions:

1. Duodenal stasis is the fluoroscopic or radiographic observation of undue retention of barium in the duodenum beyond the bulbus duodeni usually associated with dilatation of varying degree and with regurgitation often back into the cap.

2. Stasis is not a clinical entity but is evidence of a duodenitis secondary to cholecystic disease, duodenal ulcer, chronic appendicitis, colitis, and other gastro-intestinal conditions.

3. Various symptoms, such as abdominal distress, nausea, vomiting, headaches and belching, usually seen in all gastro-intestinal lesions, are the subjective evidence of duodenal antiperistalsis objectively demonstrated by stasis.

4. Observations at operation corroborate in a high percentage of cases the various conditions in which duodenal stasis is found.

5. Chronic duodenal ileus due to mechanical obstruction is rare. —W.E.V.

Gangrenous Balanitis

Ulcerative and Gangrenous Balanitis. Matthew A. Reasoner, *New York State J. Med.*, New York, 1927, xxvii, 767.

The author bases his report upon the examination of 708 hospital admissions, covering a period of about two years. All of these patients had some lesion suspected of being venereal in character. The list given shows a total of 49 acute infections with Vincent's spirochete and of this number 10 had a coincident initial lesion of syphilis.

Infections caused by the spirochete of Vincent are far more common among the poorer classes of Europe than in the United States, but since the World war there has been an increase in the United States. Erosive and gangrenous balanitis is not of necessity venereal in origin, though usually so. In the presence of a chronic mouth infection and in the absence of a history, the infection should not necessarily be considered venereal in origin. The gangrenous type is rare, but when present requires immediate and strenuous treatment. The standard methods of venereal prophylaxis are equally efficacious in preventing the appearance of erosive and gangrenous balanitis. Except in the case of an emergency, it is not good practice to use arsphenamin in the treatment of a genital infection until its syphilitic nature has been definitely determined. The exclusion of syphilis may be more difficult and is more important than the diagnosis of erosive and gangrenous balanitis. The literature is reviewed and bibliography appended.

Bath Conjunctivitis

Swimming Bath Conjunctivitis. Charles A. Bahn, *New Orleans Medical and Surgical Journal*, vol. 79, No. 8, February, 1927, pp. 586-590. (Abstract by C. T. Butterfield.)

The history of 36 cases of conjunctivitis treated by the author and his associate is reviewed. The author believes that these infections were contracted in swimming pools and that the infectious material is probably either human epithelium or urine with the attendant bacteria. The bacteriological studies made were uniformly negative. Two methods of treatment of the disease, with the results, are discussed. An outline of the suggestions for the sanitary control of pools is given as follows: (1) Require thorough preliminary scrub and shower; (2) instruct against overcrowding and urinating while bathing; (3) provide a minimum of 15 gallons of water per bather; (4) use chlorine at rate of 1 mg. per liter; (5) scrub tanks once or twice daily.

THE WEST VIRGINIA MEDICAL JOURNAL

C. A. RAY, *Editor-in-Chief* - - - - - - - - Charleston

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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EDITORIALS

Employers' Compensation

As a result of the conference between members of the West Virginia State Medical Association and the Compensation Commissioner, we are reliably informed that a new fee schedule is about completed, which will conform very closely to the recommendations of the association's representatives. This schedule will probably be issued before the publication of this article, and we feel it will meet the approval of the entire profession.

Mr. Haeberlin is inclined to deal fairly with surgeons and hospitals, and it is incumbent on the profession to meet his detailed requirements. Much of the trouble and controversies under the old regime grew out of an effort on the part of some doctors to over-charge for services rendered, thereby bringing the whole profession under disrepute, requiring investigation of many cases which otherwise would have been settled without delay.

We think much good will result from the conference and the entire profession is indebted to the men who left their work and came here for that purpose.

Skin Rejuvenation

(Editorial—American Medicine, July, 1927)

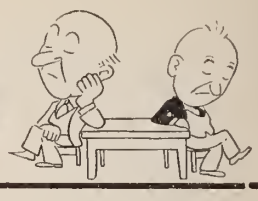
In a recent number of the *Dermatologische Wochenschrift* there appeared an article of profound human interest as well as dermatologic importance, concerning the rejuvenation of the skin by subcutaneous injection of a serum obtained by immunizing rabbits with a preparation of the epithelial juice of guinea pigs. According to the author, Dr. Joseph Kapp, a pupil of Unna, the effect of this serum is a marked increase in mitosis, resulting in what may practically be termed a new skin growth. If Dr. Kapp's experiments which cover a period of 14 years are substantiated in general practice, it is not too far fetched to say that he will have made a most notable contribution to modern medical science.

The obvious and immediate value of such a treatment in post-operative cases, and in cutaneous infections which may respond to it, need hardly be elaborated on. Vastly more interesting from the human point of view is the possible effect it may have on our friends, the beauty specialists, with their creams and lotions for every purpose, that supposedly feed the skin, or banish wrinkles, or God knows what.

That women will always spend money to be good looking is as certain as anything can well be in this world. That she is frequently hoaxed is equally true, all educational efforts of the medical profession notwithstanding. How then will she respond to a treatment that is apparently based on very definite scientific achievements, that her own physician can administer to her in complete accordance with professional ethics, and that is not surrounded by false glamour or attended by discomfort, if not actual danger from the corrosives and toxic substances frequently present in cosmetics. How, too, will the elderly gentleman consider the possibility of banishing some of his weary furrows, and the pigmentation of age?

To us it would seem that there is opened up to the physician, always provided that Dr. Kapp's results are substantiated, a quite novel method of contact with his patients, a means of restoring some of the intimate personal relation that means so much because of the confidence it engenders and which modern life has somewhat impaired. We will watch the possible progress of this method with much interest.

NEWS NOTES OF COMPONENT SOCIETIES



Fayette County

The Fayette County Medical Society met in the Montgomery High school building in Montgomery, October 28, 1927, at 8:00 p. m. The meeting was called to order by the president, Dr. H. A. Walkup. There was an attendance of 25 physicians from various parts of the county. The program consisted of the following papers: "Infant Feeding," by Dr. G. G. Hodges, Mount Hope, W. Va.; discussion was opened by Dr. M. A. Moore, Kingston; a paper on "Late Consideration of Acute Abdomen" was to have been read by Dr. Claude Frazer of Powellton, but owing to the absence of Dr. Frazer, this number was tabled. Dr. M. C. Borman of Montgomery, gave an interesting and illustrative talk on electrocardiography, theory, practice, interpretation of tracings. Dr. C. L. Woodbridge, formerly of Hongkong, China, gave a ten minutes' talk on "How They Do It In China." Dr. J. E. Grose was on the program for "His Best Story," but owing to the fact that Dr. Grose had had his tonsils enucleated on that day he was unable to attend.

Mercer County

The regular November meeting of the Mercer County Medical Society was held in the Directors' room of the Municipal building, Bluefield, at 8 o'clock on the evening of November 17. The meeting was opened with a number of clinical cases by various members present.

The program consisted of a paper on "Aims and Benefit of Arthodontic Treatment" by Dr. Frederick Black of Bluefield, "Some Interesting Hospital Cases" by Dr. C. M. Scott of Bluefield, "Interesting Hospital Cases" by Dr. Wade H. St. Clair of Bluefield, and a talk on venereal diseases by Miss Ada L. Coddington of the state health department.

The regular monthly meeting of the Woman's Auxiliary of the Mercer County Medical Society was held in conjunction with the society gathering, meeting in the auditorium of the Municipal building.

The November meeting of the Mercer society was open to the public and there was a large attendance of both members and residents of Bluefield. The Bluefield Woman's Club assisted in making arrangements for the meeting.

H. G. STEELE,
Secretary.

U. S. Civil Service

The United States Civil Service Commission announces the following open competitive examinations: Associate pathologist, $3,000; assistant pathologist, $2,400.

Applications for associate and assistant pathologists must be on file with the Civil Service Commission at Washington, D. C., not later than December. The examinations are to fill vacancies in the Bureau of Mines, Department of Commerce, for duty in Washington, D. C., or in the field. A vacancy exists at Pittsburgh, Pa.

Competitors will not be required to report for examination but will be rated on their education, training and experience; and writings to be filed with the application.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the United States civil service board of examiners at the post office or customhouse in any city.

GENERAL · NEWS

Fee Schedule Decided

A flat rate for fractures, dislocations and amputations, a fee schedule for physicians specializing in diseases of the eye, and an increase from $2.85 to $3.50 in hospital ward rates per day are the essential features of the decision handed down by Workman's Compensation Commissioner C. L. Heaberlin about two weeks ago. The new fee schedule set by Commissioner Heaberlin went into effect on November 1.

The members of the West Virginia State Medical Association can feel proud of their Workman's Compensation Committee and the physicians and surgeons who assisted in securing the new fee schedule for compensation cases. The final report released and published by Mr. Heaberlin corresponds in practically every detail with the recommendations of the association committee.

Included in the report published by the Compensation Commission is an announcement by the committee which states in part, "The Committee believes that the revised fee schedule now in force will work to the interests of the patient and physician alike, that it will correct many of the old abuses of the compensation system, and that it will be conducive to a happier understanding between all parties concerned in the care of injured employees and the adjustment of awards. Its success will depend largely on the extent to which the physicians and hospital superintendents of West Virginia cooperate with the Commissioner in his earnest efforts to promote efficiency."

The fee schedule adopted by the Commissioner provides a flat rate, including reduction and subsequent treatment, ranging from $100 for a femur to $15 for the phalanges. It is pointed out, however, that in cases where multiple fractures occur, the fee shall be the major one plus additional fifty per cent of the fee prescribed for each of the others. It is also pointed out that in the cases of skull, pelvis, vertebrae, infected compound fractures and complicated fractures, all claims for additional services must be taken up with the Commissioner by special correspondence.

Hospital ward rates, including general general nursing, material for dressings and board, have been increased under the new schedule from $2.85 per day to $3.50 per day and in addition, the maximum charge for any one case has been raised from $300 to $800. Hospitals will be allowed to make an operating room charge of $10 for all major operations and $5 for minor operations. In connection with the section devoted to hospital fees, it is stated that in case of dressings to hand or foot and minor lacerations, cases will be closed in two weeks except on special correspondence with the Commissioner. It is also stated that daily dressings will not be paid unless in case of infection.

The section of the report devoted to specialists in diseases of the eye provides flat rates of from $100 for extraction of traumatic cataract (including after care) down to three dollars for hospital calls.

It is set forth in the Commissioner's report that reconstruction work will be paid for but must be taken up with the Commissioner and the fee decided upon prior to operation. It is also pointed out that in the case of plastic operations and all other surgical procedures not included in the schedule, fees will be paid in keeping with other fees outlined.

The Workman's Compensation Committee of the West Virginia State Medical Association met with Commissioner Heaberlin on September 6, 1927, for the first time and the work of preparing the schedule has been going forward steadily since that time. The committee, composed of Dr. W. A. MacMillan, Dr. J. Ross Hunter and Dr. R. H.

Walker, "believes that this revised fee schedule will prove far more satisfactory than the ones previously used and that it will be endorsed by all physicians and hospitals."

Hospital Convention

The second annual meeting of the Hospital Association of West Virginia will be held at the Kanawha Hotel, Charleston, Monday, December 5, 1927. A number of important business matters are expected to come up, new officers for 1928 will be elected, and an attendance of more than 100 members and associate members is expected.

Included in the list of speakers will be Dr. C. A. Ray of Charleston, president-elect of the West Virginia State Medical Association, Governor Howard M. Gore, Mayor W. W. Wertz of Charleston, Dr. H. F. Spillers of Wheeling, president of the Hospital Association, Dr. L. W. Lawson of Logan, Dr. James McClung of Richwood, Dr. John E. Cannaday of Charleston, Dr. Walter E. Vest of Huntington, Dr. Harry M. Hall of Wheeling, Dr. M. C. Borman of Montgomery, Dr. O. B. Biern of Huntington, Dr. J. H. McCulloch of Beckley, Dr. J. R. Shultz of Charleston, Dr. G. C. Schoolfield of Charleston, and Mr. C. L. Heaberlin, Workman's Compensation Commissioner of West Virginia.

Dr. P. D. Barlow

(The following address was delivered at Baltimore by Dr. Barlow upon his inauguration as President of the Baltimore and Ohio R. R. Surgeons Association.)

It is somewhere recorded that the Creator sometimes chooses the weak things of this life to confirm the mighty, and again it is stated: A little child shall lead them.

The members of this association who met in Chicago in May, 1926, must have been familiar with the aforesaid quotations as is evidenced by their electing me to serve as president of our great organization, the association of Baltimore and Ohio Railway Surgeons. But notwithstanding my inability to properly serve you I nevertheless appreciate the honor which was conferred upon me and your confidence in me as expressed by your placing me in this responsible position, has touched my heart very tenderly, I sincerely thank you.

When a young man I was a member of a county debating society and that I might make a study of oratory I wrote to a correspondence school asking for information concerning its course of study pertaining to public speaking. Return mail brought from the president of the school a letter which stated that he had two courses to offer: First, and extensive one for which he charged $2.00; second, a bargain course

P. D. BARLOW, M. D. of McMechen, W. Va., the president of the Baltimore and Ohio Railroad Surgeons' Association.

which cost $1.50. I sent him the $1.50 and in due time received these instructions: First, stand up to be seen. Second, open your mouth to be heard. Third, sit down to be appreciated. But on this occasion I must ask your pardon for violating these rules for just a moment that I may in speaking for the members of this noble organization as well as for myself, say to these gentlemen who have so kindly greeted and welcomed us that we thank them and accept their kind words in the same genuine spirit in which they were spoken. Let us give these gentlemen a rising vote of thanks.

To each and every member of this asso-

ciation I wish to say that I not only want you to feel at home, but to feel that each session is for you and yours to enjoy. Let each member here make himself free to discuss papers and make suggestions that have for their purpose the uplifting of the association of B. and O. Railway Surgeons or that might be of benefit to the great company in which we are interested and for which we labor. Let us work hand in hand for the good of all concerned from the highest to the lowest. It is said "Those who bring sunshine into the lives of others can not keep it from themselves." Therefore, by serving others, we serve ourselves. I have long since learned that true happiness comes only from "duty done" and there is not an hour of life but trembles with its duties. Therefore, my brother, if a moment passes unimproved the appointed work of that moment can never be accomplished without neglecting some other duty.

Blessed is he who has found and does his duty and the very doing of which may be likened to a flowing channel dug through the sour, festering swamps of one's existence, draining off the sour, festering water from the roots of the remotest grass blades, making instead of swamp a green and fruitful meadow with its clear flowing stream.

In conclusion, let me say that owing to the fact that we are assembled in Baltimore, a city around which many of the fondest memories of my early manhood days center, makes this meeting of our association one of particular interest to me. Some one has said that should you turn the pages of an old book and find pressed between the leaves a faded flower, it will bring back with a little shock of feeling the hand that plucked it or the distant hill upon which it grew and bloomed years ago. So since my arrival here, viewing some of the old familiar scenes of other days has caused me to live over many of the scenes of days long since passed.

It was here in this city I received my medical education and formed the acquaintance of scores of fond and life-long friends. Many of my class mates with whom I associated daily have finished their work and gone to their haven of rest. Their ship is anchored, its voyage done, and from across the years there comes to me now the closing words of a declamation one of my classmates used to deliver, "We are all marching one way."

In this city I married my wife, a sister of the late lamented Dr. George L. Duane. Ah! my fellow practitioners, can you wonder that I am glad to be here and again live over the memories of my student days. I shall never forget them, nor the friends whose gentleness and smiles made bright summer hours amid the frosts of winter.

The poet must have been thinking of the friends of his school days when he wrote:

Let Fate do her worst. There are relics of joy,
Bright dreams of the past which she cannot destroy.
They come in the night time of sorrow and care
And bring back the features that joy used to wear.
Long, long may my heart with such mem'ries be filled
Like the vase in which roses have once been distilled.
You may break, you may shatter the vase if you will
But the scent of the roses will hang round it still.

Now my friends, as your presiding officer, I am only your servant and I call upon you to help and assist me that this convention may be a profitable as well as an enjoyable one.

When in Washington

The Medical Society of the District of Columbia has invited all West Virginia doctors visiting the nation's capital to make their society building at 1718 M street, N. W., their medical headquarters during their stay. The library in the building contains the current medical periodicals and daily lists of clinics held in the various hospitals.

A visit to the District of Columbia Society will furnish many opportunities to make personal contacts with the members of the profession there.

Midwifery in Virginia

A recent report made before the Medical Society of Virginia by a committee appointed to make a study of the midwife situation in that state should be of interest to the profession in our own state. The recommendations made by the committee are offered without editorial comment and are as follows:

1. We regard midwives as necessary at the present time.

2. We endorse the action of the State Board of Health in decreasing the number of midwives in the state from 9000 to fewer than 5000. Only 1233 of these were sufficiently active in 1926 to deliver over five cases during the year.

3. We recommend that the individual members of the Medical Society of Virginia offer their personal assistance in attempting to improve the education of midwives.

4. We endorse the action of the State Board of Health in offering instruction to pregnant women, and suggest that this instruction be pushed even more vigorously.

5. We suggest the establishment in various sections of the state, preferably in general or private hospitals, of dispensaries for the instruction and examination of indigent pregnant women.

6. We recommend that there be in every county of the state a health nurse, part of whose duties will be to provide competent and comprehensive prenatal instruction, and urge that the doctors of each county cooperate in securing this provision.

7. The ideal for which we are striving is that all the deliveries in the state should be under the supervision of the medical profession of the state.

8. The medical schools should be responsible for better instruction of students in obstetrics, and for post graduate instruction.

9. The State Board of Health should be responsible for the distribution of literature; and, in conjunction with the local medical profession, be responsible for midwives as long as they are needed; and be responsible for instruction of the public as to the need of prenatal care.

Unsound Mentor

"Until American children learn in their homes and in the schools the simple things that they ought to know about the construction and functioning of their own bodies, peculiar doctrines will continue to be foisted on them and their parents," declares *Hygeia* in an editorial comment on the announcement of a new weekly publication to be known as the *National Health Review.*

The new periodical is to be a competitor of the Macfadden organ, *Physical Culture*, the outstanding bible of health cultists and faddists. It promises articles by the "foremost doctors, naturopaths, chiropractors, and diet specialists." The features announced for the first issue are of "the same type of ridiculous hokum that characterizes the Macfadden pages," says *Hygeia.*

C. L. Rohrbaugh, M. D.

Dr. C. L. Rohrbaugh of Belington, a member of the West Virginia State Medical Association and one of the outstanding practitioners in central West Virginia, died suddenly on Tuesday afternoon, October 18, at the age of 69 years. His death came as a distinct shock to his many friends and associates in the association.

The deceased was born in 1858 and was graduated from the Ohio Medical College of Cincinnati, at the age of 25 years. The following year he was licensed to practice in West Virginia and had made his home in this state practically since that time.

Liver in Anemia

The striking effect of feeding liver and certain preparations of liver on a number of physiological processes has been established. In the case of growing animals, it appears to promote rapid gains in size. The extraordinary effect of diets including liver on severe anemias of long standing in dogs has been shown. Vigorous regeneration of hemoglobin and red blood cells can be brought about by feeding the hepatic tissue of various species, beef, pig, sheep, calf and

chicken having been tested with unquestionable success. Striking effects have been obtained in pernicious anemia with diets containing large amounts of liver in one form or another. Studies undertaken to determine the constituents of liver which are effective in pernicious anemia have been made and potent concentrates have been obtained.—(*Jour. A. M. A.*, August 13, 1927 p. 524.)

On Sterilization

A new method of sterilization clinical thermometers, which has proved more effective than previous methods, has been adopted by the United States Veterans' Bureau and orders have been dispatched to field stations of the bureau to this end, the acting medical director of the bureau, Dr. Winthrop Adams, announced in a circular (No. 448) made public October 22. The full text of the circular follows:

The experience of the United States Naval Medical Supply Depot shows that the sterilization of clinical thermometers by immersion in a 10 per cent solution of liquor formaldehyde (made by diluting one part of liquor formaldehyde with three parts of water) insures a solution with a potent germicidal activity. It has been found that such formaldehyde solution not only does not affect the pigment on clinical thermometers, which is readily removed by other disinfectants, but even fixes this pigment.

Field stations of the bureau will adopt this method of sterilization of clinical thermometers. The solution of formaldehyde so prepared, being volatile, must be renewed at frequent intervals.

Esophageal Cancer

Radium Implantation in Esophageal Cancer. Joseph Muir, *Laryngoscope*, 37:660, September, 1927.

Cancer of the esophagus is generally regarded as the most hopelessly incurable of malignant lesions. None of the forms of treatment which have proved successful in combatting cancer elsewhere in the body have heretofore been possible of application to the esophagus. Radium has been even less beneficial than surgery. The prime drawbacks to this use of radium have always existed; first, the difficulty of placing it accurately; second, the practical impossibility of maintaining it in position long enough to be effectual and third, the great danger of burning the tissues, which will induce sloughing and fistula into the mediastinum—invariably a fatal accident.

To obviate these difficulties the author has elaborated a technique of radium implantation through a specially designed esophogoscope which can be readily carried out by anyone experienced in the use of this type of instrument. The field of operation is illuminated and an implanter passed through the tube, so that each radon seed may be placed in full view, and the entire lesion accurately mapped out and evenly implanted. The radioactive center employed is a removable platinum radon seed, which offers the double advantage of being so screened that it will not induce necrosis, and the possibility of removal by means of an attached thread so that no foreign bodies are left in the tissue after the continued radium emanation has entirely decayed. The entire procedure is facilitated if done under the fluoroscope, though this is not absolutely essential.

The results in the small series of cases so far treated by this method have been highly gratifying, and although no permanent results can be reported before the lapse of five years, the author feels that the method merits a wide trial, even if it proves to do no more than prolong lives which otherwise will be very shortly terminated.

Health Conference

The annual meeting of the West Virginia Public Health Association and the State Health Officers' Conference was held in Morgantown on November 21-23 inclusive. The sessions were held in the Elks Club rooms and were presided over by Dr. David Littlejohn of Charleston, president of the association.

Nationally known public health speakers

who were on the program of the Morgantown meeting included Dr. W. W. Peter, associate secretary of the American Public Health Association; Dr. J. P. Leake of the U. S. Public Health Service; Dr. Josephine Baker of the U. S. Children's Bureau; Miss Miriam Birdseye of the U. S. Department of Agriculture, and Dr. Clarence E. Smith, associate milk specialist of the U. S. Public Health Service.

The state speakers included H. C. Ogden of Wheeling, Mrs. Dorsey R. Potter of Clarksburg, Prof. T. L. Harris of West Virginia University, Mrs. Bertha Filson, president of the State Educational Association, Mrs. H. T. Sutton of Bethany, Mrs. A. P. Boomsliter of Morgantown, Nat T. Frame of the University Extension Division, and Mrs. Jean T. Dillon of the state health department.

PERSONALS

—Dr. C. W. Stallard of Washington, D. C., has recently become associated with the Coal Valley Hospital and Clinic, Montgomery, W. Va., as staff orthopedist. Dr. Stallard, a native of Virginia, is a graduate of William and Mary College and George Washington Medical School. He has had four years' residency at the Emergency Hospital, Washington, D. C.

—Dr. H. S. Keister of Fairmont returned on October 30, 1927, from a 14 weeks' stay in Europe doing post graduate work in goiter at Bern, Switzerland, and at the University of Vienna, Austria. He was accompanied on the trip by Mrs. Keister.

—Dr. James Robinson McClung, formerly of Richwood, has transferred his membership from the Central West Virginia Medical Society to the Ohio County Medical Society and is now located in the Central Union Trust building at Wheeling.

—Dr. I. D. Cole of Clarksburg is ill and is confined to the St. Marys hospital.

—Dr. James A. McCall, for six years associated with the Michigan state department of health at Lansing, has been appointed Marshall county health officer to succeed Dr. C. F. Makepeace, now with the health bureau of New York City.

—Dr. H. F. Spillers of Wheeling, president of the Hospital Association of West Virginia, was a recent business visitor in the capitol city.

—Dr. W. A. McMillan has returned from Canada where he visited his parents.

—Dr. J. C. Irons, secretary of the Barbour-Randolph-Tucker Medical Society, has recently moved from Dartmoor in Barbour county to Horton in Randolph county.

Walter Reed Shrine

The birthplaec of Major Walter Reed, at Belroi, Va., was dedicated as a national shrine on October 15, by the Walter Reed Memorial Commission, the Department of War announced in a recent statement. The full text of the statement follows:

On October 15 the Walter Reed Memorial Commission of the Medical Society of Virginia for the Encouragement of Research dedicated as a national shrine—Belrio, Gloucester county, Virginia—the birthplace of Walter Reed, who in 1900 headed the mission of Army medical officers to Cuba, to successfully investigate yellow fever and other tropical diseases.

The program included musical numbers by the Fort Eustis Army Band, an exhibition flight of army airplanes from Langley field, and remarks by Schuyler Otis Bland, member of the House of Representatives; Dr. Edward C. S. Taliaferro, chairman of the Walter Reed Memorial Commission, Norfolk; Dr. Clarence Porter Jones, secretary and treasurer, Walter Reed Memorial Commission; Mrs. William Fleet Taliaferro, president Gloucester County Women's Club, Nuttall, Va.; Dr. D. O. Clements, Ordinary, Va.; Dr. Lawrence T. Royster, professor of pediatrics, University of Virginia; and Col. Jefferson Randolph Kean, editor *The Military Surgeon*, Washington, D. C.

Germs Lose Virulence

Changing habits and diet of man provide germs with different types of soil, so that it is not difficult to believe that germs change their character in the course of centuries, notes *Hygeia* editorially.

Leprosy, smallpox and scarlet fever have been almost stamped out or have largely lost the virulence that made them scourges of the past. Appendicitis has become commoner, but it is pointed out in the editorial that the seeming increase may be due to greater facility in recognizing the disease.

Outdoor sports, sensible diet and comfortable clothes have almost completely eliminated a condition known as chlorosis, formerly called the "green sickness" of young girls, a form of secondary anemia due to the sheltered life of the past.

Quack Hair Specialist

"The public of today demands finesse in being gypped and quacks rise to the occasion," observes Dr. Arthur J. Cramp, director of the bureau of investigation of the American Medical Association, writing in *Hygeia* for October.

Dr. Cramp recounts his investigation of the Professor Scholder Institute of New York, which professes to diagnose hair health from a microscopic examination of speciments of hair.

As a starter Dr. Cramp sent in three specimens for analysis each from a different address. One specimen was from a woman's coat cuff of the fur known as platinum fox; another was from a collar of so-called wolf (Siberian or Japanese dog), while the third was from the healthy head of a young woman whose hair reached below her waist. The diagnosis in each case read:

"I have anyalyzed the specimen of hair you sent me. A microscopic examination discloses that the roots are in a seriously undernourished condition. You are in grave danger of continuous and increasing loss of your hair, but it can still be saved by prompt treatment."

Professor Scholder then consented to take charge of the case, promising that his treatment if faithfully followed would restore the hair and scalp to a normal condition.

Wishing to test whether the professor really knew a hair when he saw it, the doctor sent to the marvelous diagnostician, from two more addresses, some unraveled filaments of heavy twine. Again came back the stock letters declaring that the roots were in a seriously undernourished condition!

"The advertiseents say that 'the newspapers in this country and abroad have proclaimed Professor Scholder as the marvel of his profession.' They should. Any one who on the basis of a microscopic examination of a piece of twine can diagnose the hair health of a person he has never seen may rightly be called a marvel," comments Dr. Cramp.

Newspaper Ethics

Dr. Charles A. L. Reed was president of the American Medical Association at the time of its reorganization. He, later, was on the committee that formulated its "Principles of Ethics." He is now devoting himself exclusively to literary work, his last book, "The First Estate," just from the Startford press, being a novel with a scientific motif. But, in addition to writing books, he writes an article on health and success every day for the King Features Syndicate, New York, which, in turn, furnishes the series for simultaneous publication in many newspapers of the United States, Canada, and foreign countries. Dr. Reed's views on the ethics involved in his newspaper work are, therefore, of interest. In a recent interview he said:

"No, I have not 'retired.' I am now practicing 'educational medicine.' I am 'carrying the message to the masses,' as it were. It is true my articles are having a phenomenal run. This, in large part, is due to the influence of the medical profession. You see, I had long wanted to do just what I am now doing. The opportunity came to me unexpectedly. I saw, however, that newspaper writing could not be ethically combined with a fee-earning practice. Each

was entirely ethical within itself but the two wouldn't mix. The combination spelled 'advertising' with the worst form of unfair competition. My practice at the time was distinctly national. But, without hesitation, I announced to the entire medical profession that I would accept no more patients—and I haven't. Now, in spite of the fact that I have never published my home address in my articles—another fine ethical point—I do receive through my many newspaper offices literally hundreds of letters asking for treatment. In no single instance have I ever given it. The experience, however, shows what I mean by 'unfair competition.' On the other hand I have used my articles, now numbering well on to two thousand, to creat a higher appreciation of the medical profession by the general public—a better understanding between the two. This is a thing that I have been and am doing much more effectively, so far as publicity methods are concerned, than the profession in any locality can do in its own behalf. It is doubtless in recognition of this fact that ,as I know to have been true in many instances, my professional colleagues have asked editors to put on my feature and have thus helped to extend my circulation and influence.'

Secretary Conference

Dr. C. A. Ray, editor of the *Journal* and president-elect of the West Virginia State Medical Association, and Mr. J. W. Savage, executive secretary, have just returned from Chicago where they attended the conference of state secretaries sponsored by the American Medical Association on November 18-19. West Virginia has the distinction of being one of the five states in this country employing a full-time secretary for their state medical association.

Among the distinguished speakers on the program of the conference of secretaries were Dr. Jabez N. Jackson, president of the American Medical Association; Dr. W. S. Thayer, president-elect, and Dr. Morris Fishbein, editor of the *A. M. A. Journal.* Other speakers included Dr. Edward B. Heckel, chairman of the board of trustees of the A. M. A.; Dr. Henry O. Reik, editor of the *New Jersey Medical Journal;* Dr. W. C. Woodward, secretary of the bureau of legal medicine and legislation of the A. M. A., and Dr. J. B. Morrison, secretary of the medical society of New Jersey.

The important subjects taken up for discussion at the meeting were the Basic Science law, Periodic Conferences between officers of adjoining state associations, the Annual Meeting, The Free Clinic, the Full-Time Secretary and the Constitution and By-Laws.

A number of states are considering the advisibility of employing full-time executive secretaries and were anxious to learn the various methods of finance in use by the five associations employing such secretaries. The state associations who already have full-time secretaries are Ohio, Wisconsin, Indiana, Virginia and West Virginia.

Two points brought out at the meeting were especially interesting to the West Virginia representatives. These included the advisibility of scientific exhibits at the state conventions and the "package library" plan conducted in Wisconsin in connection with their state university.

Mrs. Preston Talks

Mrs. B. J. Preston of Charleston, president of the West Virginia Woman's Auxiliary, was one of the speakers at a meeting of the Mercer County Medical Society held at the West Virginia Hotel in Bluefield on October 19. Mrs. Preston gave an entertaining talk and urged that *Hygeia* be placed on every doctor's waiting room table in West Virginia.

Dr. Ealy Appointed

Dr. D. B. Ealy of Moundsville, secretary of the Marshall County Medical Society, has been appointed coroner of Marshall county by the health commission there. Dr. Ealy has accepted the appointment and will enter upon his new duties at once.

WOMAN'S AUXILIARY

Hygeia in West Virginia

The auxiliaries have adopted the extension of *Hygeia* as part of their health promotional program. *Hygeia* is going to 499 subscribers in West Virginia. The auxiliaries in Kanawha, McDowell and Monongalia counties have secured a number of these subscriptions.

The population of West Virginia is estimated at 1,669,324. Only 499 are receiving *Hygeia*—leaving a field of 1,668,825 prospective subscribers! This field covers 55 counties. *Hygeia* chairmen in these counties are invited to write for subscription campaign suggestions either to Mrs. J. Preston Lilly, State *Hygeia* Chairman, Morgantown, or to Circulation Manager, *Hygeia*, 535 N. Dearborn Street, Chicago, Ill.

An Open Letter

During November and December *Hygeia* may be quoted at the following holiday rates:

1 subscription	$3.00 each
2 subscriptions	5.00 each
3 or more subscriptions	2.00 each

"Healthyland" has been offered, as advertised, only with a year's subscription to *Hygeia* at $4.00 or with a two-year subscription at $6.00.

As a special holiday offer, however, during November and December we can quote "Healthyland" without *Hygeia* at $1.50. "Healthyland" makes an ideal gift for children,—just the kind of story book and picture book the children love.

Hygeia is listed with the magazines that have become popular as Christmas gifts. The December number will be particularly attractive with eight poster pages in colors. We should be glad to send sample copies of this issue to auxiliary members upon request.

Now that Christmas shopping has begun the foremost question in everyone's mind is "What shall I give for Christmas?" *Hygeia* was a happy answer to this question for hundreds of Christmas shoppers last year. This year we are offering them "Healthyland" also.

The holiday season is marked by a demand for magazines—the auxiliaries will find this the best time in the year to introduce *Hygeia* and "Healthyland" to home folks. An every-member drive for gift subscriptions is one way to increase your subscription list for *Hygeia*.

Very truly yours,
CIRCULATION MANAGER, *Hygeia*.

Hygeia in Public Schools

That the work of advancing the interests of *Hygeia* in West Virginia was rapidly progressing was the opinion expressed by Mr. F. V. Cargill of Chicago, circulation manager of the publication, in a recent interview with the secretary of the West Virginia State Medical Association. Mr. Cargill pointed with particular pride to the enterprise of the West Virginia Woman's Auxiliary in placing the magazine in a number of state high schools.

"If our news stand sales in West Virginia were as good in comparison as our subscriptions we would be more than satisfied," Mr. Cargill said. He added that there was little or no demand for the publication on the news stand in this state and thought that an occasional word for *Hygeia* at the county meetings would greatly help in remedying the situation.

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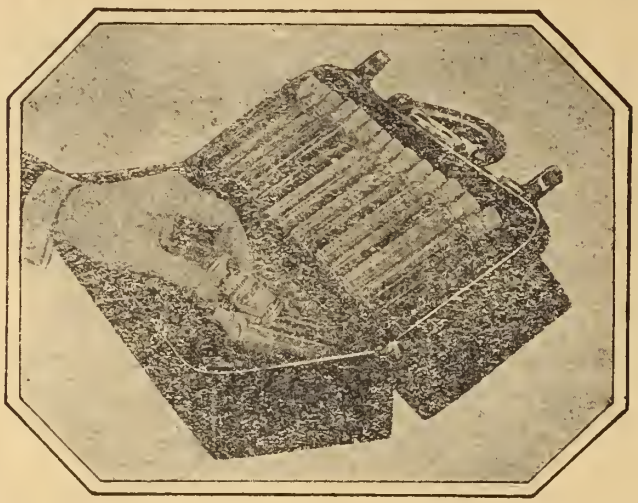

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